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Resources
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Washington

Water Supply Outlook Report

March 1, 2005



Water Supply Outlook Reports and Federal - State – Private Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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Washington Water Supply Outlook

March 2005

General Outlook

March came in like a lamb dieing of thirst. Washington's mountain snow reservoir is in a dehydrated state with at least 37 new low snow-water-equivalent records being set. As an example: Stampede Pass with 58 years of data collection and a previous record low of 11.1 inches, set in 1977, now has only 5.1 inches of water content. Much below average precipitation added to the reduction of the overall water supply conditions. However near average temperatures during February helped maintain what little mountain snow remains. Record low April-September runoff is also being predicted at 26 stream gage sites. Unlike the 1977 and 2001 drought years weather forecasters are not predicting much relief in short or long range forecasts, with continued warm and dry conditions.

Snowpack

The March 1 statewide SNOTEL readings were 26% of average. The Green River Basin snow surveys reported the lowest readings at 4% of average. Readings in the Kettle River Basin (including Canadian data) reported the highest at 78% of average. Westside averages from SNOTEL, and March 1 snow surveys, included the North Puget Sound river basins with 23% of average, the Central Puget river basins with 20%, and the Lewis-Cowlitz basins with 24% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 24% and the Wenatchee area with 37%. Snowpack in the Spokane River Basin was at 34% and the Walla Walla River Basin had 27% of average. Maximum snow cover in Washington was at Lyman Lake SNOTEL in the Chelan Lake Basin, with water content of 25.6 inches. This site would normally have 55.1 inches of water content on March 1. Last year at this time Lyman Lake had 31.6 inches of snow water.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane	35	34
Pend Oreille	52	48
Okanogan	69	61
Methow	47	43
Conconully Lake	47	43
Wenatchee	34	28
Chelan	56	38
Upper Yakima	22	19
Lower Yakima	24	23
Ahtanum Creek	28	30
Walla Walla	27	27
Lower Snake	38	38
Cowlitz	23	25
Lewis	20	23
White	28	27
Green	4	4
Cedar	8	8
Snoqualmie	17	18
Skykomish	22	23
Skagit	31	25
Baker	19	21
Nooksack	23	24
Olympic Peninsula	16	16

Precipitation

During the month of February, the National Weather Service and Natural Resources Conservation Service climate stations reported below average precipitation totals throughout Washington river basins. The highest percent of average in the state was at Bellingham which reported 57% of average for a total of 2.05 inches. The average for this site is 3.59 inches for February. Chewelah reported receiving no rain for the month. The wettest spot in the state was reported at Skookum Creek SNOTEL in the Tolt River Basin with a February accumulation of 6.7 inches. Basin averages for the water year are all below average with the Olympic Peninsula reporting the highest at 76% and the Lower Yakima and Walla Walla river basins with the lowest at 51% of average.

RIVER BASIN	FEBRUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane	26	69
Colville-Pend Oreille	25	70
Okanogan-Methow	11	67
Wenatchee-Chelan	22	62
Upper Yakima	19	55
Lower Yakima	19	51
Walla Walla	19	51
Lower Snake	29	64
Cowlitz-Lewis	20	55
White-Green-Puyallup	19	57
Central Puget Sound	29	71
North Puget Sound	29	73
Olympic Peninsula	20	76

Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation and flood control. Reservoir storage in the Yakima Basin was 508,000-acre feet, 102% of average for the Upper Reaches and 181,000-acre feet, 132% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 65% of average for March 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 72,000 acre feet, 50% of average and 30% of capacity; Chelan Lake, 435,000-acre feet, 174% of average and 64% of capacity; and the Skagit River reservoirs at 133% of average and 80% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	30	50
Colville-Pend Oreille	N/A	N/A
Okanogan-Methow	47	65
Wenatchee-Chelan	64	174
Upper Yakima	61	102
Lower Yakima	78	132
North Puget Sound	80	133

For more information contact your local Natural Resources Conservation Service office.

Streamflow

March forecasts vary from 90% of average for the Columbia River at Birchbank to 22% of average for Mill Creek near Walla Walla. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 50%; Green River, 47%; and Skagit River, 56%. Some Eastern Washington streams include the Yakima River near Parker, 41%; Wenatchee River at Plain, 50%; and Spokane River near Post Falls, 42%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Statewide February streamflows also varied but were mostly below average. The Kettle River near Laurier had the highest reported flows with 327% of average. The Grande Ronde River at Troy with 31% of average was the lowest in the state. Other streamflows were the following percentage of average: the Cowlitz at Castle Rock, 34%; the Spokane at Spokane, 66%; the Columbia below Rock Island Dam, 118%; and the Cle Elum near Roslyn, 74%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
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Spokane	40-48
Colville-Pend Oreille	23-90
Okanogan-Methow	28-65
Wenatchee-Chelan	40-75
Upper Yakima	32-48
Lower Yakima	28-50
Walla Walla	22-69
Lower Snake	47-52
Cowlitz-Lewis	40-62
White-Green-Puyallup	47-52
Central Puget Sound	45-56
North Puget Sound	56-63
Olympic Peninsula	52-54

STREAM	PERCENT OF AVERAGE FEBRUARY STREAMFLOWS
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Pend Oreille Below Box Canyon	105
Kettle at Laurier	327
Columbia at Birchbank	140
Spokane at Long Lake	61
Similkameen at Nighthawk	265
Okanogan at Tonasket	200
Methow at Pateros	166
Chelan at Chelan	159
Wenatchee at Pashastin	128
Yakima at Cle Elum	58
Yakima at Parker	51
Naches at Naches	52
Grande Ronde at Troy	31
Snake below Lower Granite Dam	51
SF Walla Walla near Milton Freewater	32
Columbia River at The Dalles	83
Lewis at Ariel	36
Cowlitz below Mayfield Dam	38
Skagit at Concrete	67

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BASIN SUMMARY OF SNOW COURSE DATA

MARCH 2005

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	2/27/05	13	4.1	--	5.7	GRIFFIN CR DIVIDE	5150	2/23/05	6	1.7	7.1	9.5
ANTANUM R.S.	3100	3/01/05	7	2.7	8.0	7.0	GROUSE CAMP SNOTEL	5380	3/01/05	18	5.6	16.9	17.6
ALPINE MEADOWS	3500	3/01/05	10	4.4	39.8	33.8	HAMILTON HILL CAN.	4550	2/26/05	13	4.0	11.1	12.7
ALPINE MEADOWS SNTL	3500	3/01/05	24	12.8	47.8	36.5	HAND CREEK SNOTEL	5030	3/01/05	7	4.0	9.6	9.9
AMBEROSE	6480	2/22/05	17	4.0	9.8	10.5	HARTS PASS SNOTEL	6500	3/01/05	40	14.0	29.4	39.7
ASHLEY DIVIDE	4820	3/01/05	2	.6	6.2	6.2	HELL ROARING DIVIDE	5770	2/27/05	43	15.1	23.9	25.8
BADGER PASS SNOTEL	6900	3/01/05	42	13.2	23.2	29.7	HERRIG JUNCTION	4850	2/24/05	44	15.6	21.1	22.2
BAIRD #2	3220	2/28/05	19	5.0	6.9	--	HIGH RIDGE SNOTEL	4980	3/01/05	21	6.6	22.6	21.2
BARRE MIDWAY	4600	3/01/05	---	13.7E	29.3	28.7	HOLBROOK	4530	3/01/05	---	2.4E	7.5	8.3
BARRE TRAIL	3800	3/01/05	---	3.2E	11.6	8.2	HOODOO BASIN SNOTEL	6050	3/01/05	52	18.7	30.5	38.6
BARKER LAKES SNOTEL	8250	3/01/05	28	6.6	10.3	11.1	HUCKLEBERRY SNOTEL	2000	3/01/05	0	.0	.4	--
BARNES CREEK CAN.	5320	2/23/05	48	17.2	14.1	17.3	HUMBOLDT GLCH SNOTEL	4250	3/01/05	---	1.8	12.4	11.7
BASIN CREEK SNOTEL	7180	3/01/05	13	3.1	6.1	6.1	HURRICANE	4500	3/01/05	---	1.2E	14.5	15.6
BASSOO PEAK	5150	2/23/05	13	2.9	7.2	9.0	INTERGAARD	6450	2/24/05	6	1.6	5.5	6.2
BEAVER CREEK TRAIL	2200	2/25/05	0	.0	14.6	13.0	IRENE'S CAMP	5530	2/28/05	14	3.3	7.5	--
BEAVER PASS	3680	2/25/05	13	4.0	22.1	24.9	ISINTOK LAKE CAN.	5100	2/24/05	11	3.4	5.5	6.5
BEAVER PASS SNOTEL	3680	3/01/05	33	10.7	28.2	--	JUNE LAKE SNOTEL	3200	3/01/05	18	9.6	33.7	33.9
BERNE-MILL CREEK (d)	3170	2/27/05	24	8.2	24.0	25.3	KELLER RIDGE	3700	2/24/05	8	2.5	5.0	--
BIG WHITE MTN CAN.	5510	2/28/05	40	13.4	13.9	16.8	KELLOGG PEAK	5560	2/27/05	20	7.8	25.8	25.8
BLACK MOUNTAIN	7750	2/23/05	30	9.4	11.0	11.4	KIT CARSON PASTURE	4950	2/24/05	15	3.7	7.4	8.2
BLACK PINE SNOTEL	7100	3/01/05	18	4.6	8.0	10.1	KLESILKWA CAN.	3450	2/25/05	4	.6	7.7	10.5
BLACKWALL PEAK CAN.	6370	3/01/05	---	13.4e	23.2	30.0	KRAFT CREEK SNOTEL	4750	3/01/05	12	4.4	11.6	13.6
BLEWETT PASS #2	4270	2/28/05	5	1.2	12.1	14.1	LESTER CREEK	3100	2/28/05	0	.0	16.3	17.2
BLEWETT PASS#2SNOTEL	4270	3/01/05	4	1.2	11.6	15.7	LIGHTNING LAKE CAN.	3700	2/26/05	6	1.4	--	10.3
BLUE LAKE	5900	2/22/05	26	7.6	14.8	21.1	LOGAN CREEK	4300	2/28/05	12	3.4	6.7	6.2
BRENDA MINE CAN.	4450	3/01/05	---	9.2E	12.1	11.3	LOLO PASS SNOTEL	5240	3/01/05	40	11.4	24.6	26.8
BRIEF	1600	2/25/05	10	3.9	7.4	6.9	LONE PINE SNOTEL	3800	3/01/05	---	9.0	39.3	31.7
BROOKMERE CAN.	3000	3/01/05	12	3.2	5.9	7.6	LOOKOUT SNOTEL	5140	3/01/05	30	9.3	26.1	27.2
BROWN TOP AM	6000	2/25/05	47	16.6	45.0	53.4	LOST HORSE MTN CAN.	6300	2/27/05	16	4.4	8.1	8.0
BROWNS PASS	2/23/05	5	1.6	3.8	--	--	LOST HORSE SNOTEL	5000	3/01/05	14	3.9	18.0	18.3
BRUSH CREEK TIMBER	5000	2/28/05	3	.2	6.4	7.5	LOST LAKE SNOTEL	6110	3/01/05	---	24.1	44.0	50.7
BULL MOUNTAIN	6600	2/23/05	1	.1	3.0	5.1	LOUP LOUP CAMPGROUND	3/01/05	11	3.1	7.8	--	
BUMPING LAKE (NEW)	3400	2/28/05	10	3.2	14.7	16.9	LOWER SANDS CREEK #2	3120	3/01/05	13	5.2	18.5	16.6
BUMPING RIDGE SNOTEL	4600	3/01/05	6	2.6	24.4	24.9	LUBRECHT FOREST NO 3	5450	2/28/05	4	.9	4.6	5.6
BUNCHGRASS MDWSNOTEL	5000	3/01/05	44	14.7	22.8	24.4	LUBRECHT FOREST NO 4	4650	2/28/05	1	.1	2.5	2.7
BURNT MOUNTAIN PIL	4200	3/01/05	---	1.2	15.7	--	LUBRECHT FOREST NO 6	4040	2/25/05	2	.4	3.1	3.2
CARMI CAN.	4100	2/27/05	9	3.5	6.3	5.8	LUBRECHT HYDROPLLOT	4200	2/25/05	10	2.5	4.5	5.1
CHESSMAN RESERVOIR	6200	2/22/05	3	.8	2.9	3.1	LUBRECHT SNOTEL	4680	3/01/05	3	1.7	5.4	5.3
CHEWALAH #2	4930	2/25/05	20	7.2	14.0	--	LYMAN LAKE SNOTEL	5900	3/01/05	---	25.6	31.6	55.1
CHICKEN CREEK	4060	2/24/05	28	8.3	17.1	14.4	LYNN LAKE	4000	2/28/05	0	.0	21.5	16.1
CHIAWUKUM G.S.	2500	2/27/05	15	4.1	8.2	10.8	MARIAS PASS	5250	2/24/05	12	3.6	12.5	14.9
COLD CREEK STRIP	6020	2/28/05	16	3.9	6.0	--	MCCULLOCH CAN.	4200	2/28/05	14	4.6	6.6	6.2
COLOCKUM PASS	5370	3/02/05	17	5.0	14.3	14.6	MEADOWS CABIN	1900	2/24/05	0	.0	2.0	5.5
COMBINATION SNOTEL	5600	3/01/05	7	1.5	4.8	4.5	MEADOWS PASS SNOTEL	3240	3/01/05	4	1.4	23.8	19.8
COPPER BOTTOM SNOTEL	5200	3/01/05	0	.0	9.3	9.9	MERRITT	2140	2/27/05	6	1.6	9.3	14.2
COPPER CREEK	5700	2/22/05	2	.2	9.5	12.5	METEOR	2/25/05	13	4.2	5.2	--	
COPPER MOUNTAIN	7700	2/26/05	25	6.0	8.0	8.9	M F NOOKSACK SNOTEL	4980	3/01/05	35	11.5	51.5	--
CORRAL PASS SNOTEL	6000	3/01/05	---	8.5	29.9	29.5	MICA CREEK SNOTEL	4750	3/01/05	22	8.2	26.6	23.2
COTTONWOOD CREEK	6400	2/24/05	14	3.0	7.4	6.0	MINERS RIDGE SNOTEL	6200	3/01/05	---	19.0	32.4	45.2
COUGAR MTN. SNOTEL	3200	3/01/05	0	.0	14.1	17.1	MISSEZULA MTN CAN.	5080	2/26/05	12	3.3	--	8.4
COX VALLEY	4500	2/26/05	9	2.6	30.1	31.7	MISSION CREEK CAN.	5840	3/01/05	---	17.4E	16.7	17.1
COYOTE HILL	4200	2/28/05	17	4.6	9.2	9.1	MISSION RIDGE	5000	2/25/05	13	3.5	16.1	15.2
DAILY CREEK SNOTEL	5780	3/01/05	21	6.2	9.3	9.4	MONASHEE PASS CAN.	4500	2/23/05	31	10.1	11.1	11.8
DEER PARK	5200	2/24/05	2	.8	11.5	15.1	MORRISSEY RIDGE CAN.	6100	3/01/05	---	15.6e	--	24.1
DESERT MOUNTAIN	5600	2/22/05	28	7.1	12.7	12.6	MORSE LAKE SNOTEL	5400	3/01/05	---	12.2	44.0	47.0
DEVILS PARK	5900	2/24/05	46	12.4	34.6	37.9	MOSES MOUNTAIN (2)	4800	2/28/05	13	4.0	10.3	17.5
DISAUTEL PASS	2/23/05	11	3.4	4.2	--	--	MOSES MTN SNOTEL	4800	3/01/05	18	4.2	8.9	13.4
DISCOVERY BASIN	7050	2/25/05	16	3.5	8.8	8.4	MOSES PEAK	6650	2/28/05	27	8.0	15.0	11.7
DIX HILL	6400	2/27/05	15	4.1	8.0	10.0	MOSQUITO RDG SNOTEL	5200	3/01/05	---	16.0	34.2	31.1
DOMMERIE FLATS	2200	3/01/05	0	.0	8.3	7.2	MOULTON RESERVOIR	6850	2/28/05	12	2.3	7.1	6.2
DUNCAN RIDGE	5370	2/28/05	8	2.2	5.0	--	MOUNT CRAG SNOTEL	4050	3/01/05	30	10.1	26.9	26.8
DUNGENESS SNOTEL	4100	3/01/05	0	.0	4.6	--	MT. KOBAY CAN.	5500	2/27/05	22	6.1	9.1	10.2
EAST FORK R.S.	5400	2/23/05	13	2.6	5.8	5.6	MOUNT TOLMAN	2000	2/24/05	5	1.6	2.4	3.3
EASY PASS AM	5200	3/01/05	---	15.3E	55.0	65.1	MOWICH SNOTEL	3150	3/01/05	0	.0	--	--
EL DORADO MINE	7800	2/23/05	33	7.8	15.6	15.8	MOUNT GARDNER	3300	3/01/05	0	.0	14.5	13.0
ELBOW LAKE SNOTEL	3200	3/01/05	11	4.8	33.4	34.3	MOUNT GARDNER SNOTEL	2860	3/01/05	0	.0	14.8	14.1
EMERY CREEK SNOTEL	4350	3/01/05	22	5.8	15.1	13.3	MUTTON CREEK #1	5700	2/25/05	14	4.1	11.4	12.0
ENDERBY CAN.	5800	2/28/05	76	24.4	27.2	33.8	N.F. ELK CR SNOTEL	6250	3/01/05	23	5.8	9.8	10.2
ESPERON CK. MID CAN.	4250	2/27/05	33	10.2	--	12.5	NEVADA RIDGE SNOTEL	7020	3/01/05	25	6.8	11.5	13.2
ESPERON CK. UP CAN.	5050	2/27/05	33	10.2	13.8	14.6	NEW HOZOMEEN LAKE	2800	2/24/05	0	.0	7.0	10.3
FARRON CAN.	4000	2/25/05	27	8.1	11.3	11.3	NEZ PERCE CMP SNOTEL	5650	3/01/05	25	6.2	12.4	12.7
FATTY CREEK	5500	2/23/05	32	9.2	19.0	20.4	NEZ PERCE PASS	6570	2/24/05	21	5.3	13.5	15.7
FISH CREEK	8000	2/28/05	15	3.1	6.4	7.8	NOISY BASIN SNOTEL	6040	3/01/05	55	20.4	29.9	33.8
FISH LAKE	3370	2/28/05	26	9.6	28.4	29.9	NORTH FORK JOCKO	6330	2/23/05	64	24.6	--	--
FISH LAKE SNOTEL	3370	3/01/05	24	7.9	25.1	30.6	OLLALLIE MDWS SNOTEL	3960	3/01/05	17	7.1	42.7	48.5
FLATTOP MTN SNOTEL	6300	3/01/05	66	24.4	32.8	39.2	OLLALLIE MEADOWS	3630	3/01/05	---	5.5E	32.0	36.7
FLEECER RIDGE	7500	3/01/05	15	3.4	8.0	9.2	OPHIR PARK	7150	2/27/05	21	5.7	10.7	14.3
FOURTH OF JULY SUM	3200	2/28/05	0	.0	6.6	8.2	OYAMA LAKE CAN.</						

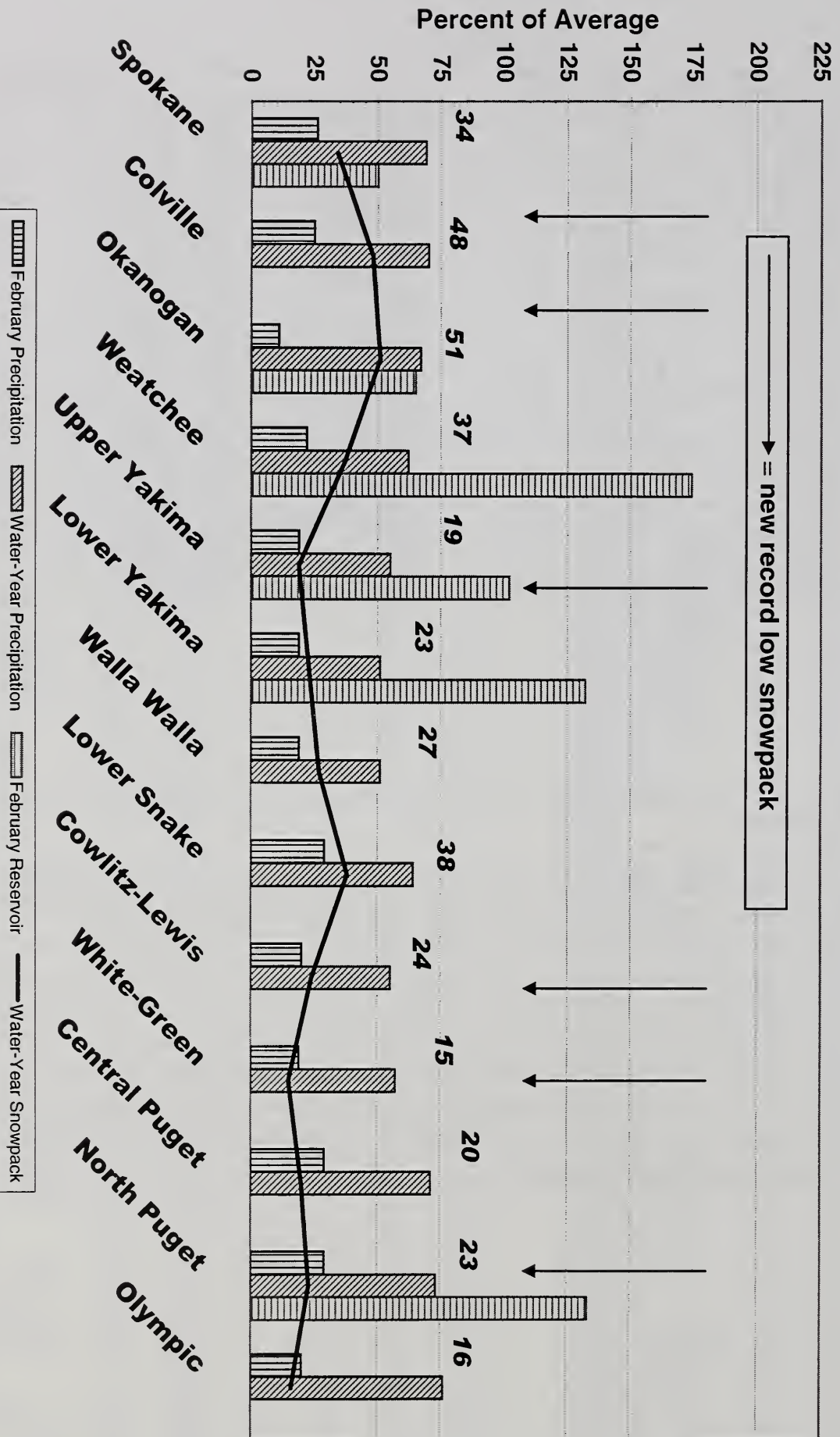
SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
RAGGED RIDGE	3330	3/01/05	0	.0	8.8	7.8	STRYKER BASIN	6180	2/24/05	52	17.1	23.4	26.9
RAINY PASS SNOTEL	4780	3/01/05	36	11.1	26.0	38.2	SUMMERLAND RES CAN.	4200	2/24/05	21	5.4	8.2	8.4
REX RIVER SNOTEL	1900	3/01/05	5	2.3	31.9	23.9	SUNSET SNOTEL	5540	3/01/05	---	9.1	18.9	26.0
ROCKER PEAK SNOTEL	8000	3/01/05	25	5.9	9.4	11.2	SURPRISE LKS SNOTEL	4250	3/01/05	---	7.3	45.2	40.1
ROCKY CREEK AM	2100	3/01/05	0	.0E	25.0	26.5	SWAMP CREEK SNOTEL	4000	3/01/05	8	3.2	15.6	--
ROUND TOP MTN	4020	3/01/05	0	.0	13.1	--	TEN MILE LOWER	6600	2/22/05	11	2.4	5.9	5.9
RUSTY CREEK	4000	2/25/05	11	3.3	6.0	6.2	TEN MILE MIDDLE	6800	2/22/05	17	4.0	7.4	8.9
SADDLE MTN SNOTEL	7900	3/01/05	42	11.6	19.1	21.8	THUNDER BASIN SNOTEL	4200	3/01/05	---	9.1	23.2	29.7
SALMON MDWS SNOTEL	4500	3/01/05	18	4.7	8.6	10.1	THUNDER BASIN	4200	3/01/05	---	4.5E	16.8	19.0
SASSE RIDGE SNOTEL	4200	3/01/05	---	9.0	25.8	30.3	THOMPSON CREEK	2500	3/01/05	0	.0	6.4	--
SAVAGE PASS SNOTEL	6170	3/01/05	41	11.3	20.4	22.5	TINKHAM CREEK SNOTEL	3000	3/01/05	---	4.5	22.5	26.7
SAWMILL RIDGE	4700	2/28/05	2	1.1	29.1	28.6	TOATS COULEE	2850	2/28/05	9	2.4	2.6	3.4
SCHREIBERS MDW AM	3400	2/24/05	35	13.0	--	43.5	TOUCHET SNOTEL	5530	3/01/05	24	7.0	27.9	28.5
SENTINEL BT SNOTEL	4920	3/01/05	13	4.2	8.2	--	TRINKUS LAKE	6100	2/22/05	54	20.0	32.6	36.4
SHEEP CANYON SNOTEL	4050	3/01/05	---	4.0	29.7	31.6	TROUGH #2 SNOTEL	5310	3/01/05	3	.6	11.2	9.3
SHELL ROCK	4500	3/03/05	0	.0	6.3	--	TROUT CREEK CAN.	5650	2/25/05	13	5.6	8.0	6.7
SHERWIN SNOTEL	3200	3/01/05	---	2.8	10.6	10.8	TRUMAN CREEK	4060	3/01/05	4	1.4	4.8	4.4
SILVER STAR MTN CAN.	5600	2/27/05	59	22.2	20.8	25.0	TUNNEL AVENUE	2450	3/01/05	4	1.5	18.6	18.6
SKALKAGO SNOTEL	7260	3/01/05	36	9.5	16.3	20.2	TV MOUNTAIN	6800	2/23/05	30	7.9	12.7	15.2
SKOOKUM CREEK SNOTEL	3920	3/01/05	8	2.7	30.1	18.9	TWELVEMILE SNOTEL	5600	3/01/05	23	7.3	15.9	16.0
SLIDE ROCK MOUNTAIN	7100	2/25/05	23	5.4	9.6	12.6	TWIN CAMP	4100	2/28/05	0	.0	19.2	21.5
SOURDOUGH GULCH SNTL	4000	3/01/05	0	.0	.0	--	TWIN CREEKS	3580	2/22/05	8	2.2	10.8	10.2
SPENCER MDW SNOTEL	3400	3/01/05	---	4.4	31.4	28.6	TWIN LAKES	2700	2/24/05	20	5.1	5.9	6.7
SPIRIT LAKE SNOTEL	3100	3/01/05	---	.2	8.7	--	TWIN LAKES SNOTEL	6400	3/01/05	54	18.5	35.0	34.7
SPOTTED BEAR MTN.	7000	2/22/05	17	4.6	11.6	12.7	UPPER HOLLAND LAKE	6200	2/22/05	47	15.5	27.4	30.0
SPRUCE SPRINGS SNTL	5700	3/01/05	3	1.7	13.6	--	UPPER WHEELER SNOTEL	4400	3/01/05	14	5.9	13.5	11.7
STARVATION CANYON	6750	3/01/05	21	5.8	13.0	16.6	VASEUX CREEK CAN.	4250	2/28/05	8	2.0	4.0	5.5
STAHL PEAK SNOTEL	6030	3/01/05	68	22.0	26.6	29.9	WARM SPRINGS SNOTEL	7800	3/01/05	35	9.1	16.4	17.0
STAMPEDE PASS SNOTEL	3860	3/01/05	12	5.1	34.3	39.8	WATERHOLE SNOTEL	5000	3/01/05	14	3.0	24.2	--
STEMPLE PASS	6600	2/22/05	13	3.2	6.6	8.3	WEASEL DIVIDE	5450	2/25/05	56	19.9	26.2	28.7
STEVENS PASS SNOTEL	4070	3/01/05	30	10.4	31.2	38.3	WELLS CREEK SNOTEL	4200	3/01/05	30	9.8	30.0	27.3
STEVENS PASS SAND SD	3700	2/27/05	13	4.0	27.1	30.6	WHITE PASS ES SNOTEL	4500	3/01/05	7	2.8	19.5	21.8
STORM LAKE	7780	2/25/05	26	6.2	9.0	10.2	WHITE ROCKS MTN CAN.	7200	2/23/05	39	12.9	15.2	19.6

Western Snow Conference:

A tradition started in 1932 to share information about measuring snow and predicting streamflow for snowmelt dominated streams in the western U.S. This tradition became the Western Snow Conference. The 73rd annual conference will be in Great Falls, Montana April 11-14, 2005. Today, the Western Snow Conference provides an international forum for individuals and organizations to share their research and information on snow hydrology. This year's theme is "Exploring New Frontiers in Snow Hydrology – 200 Years after Lewis & Clark". Session topics include: Remote Sensing of Mountain Snowpack and panel discussion, Hydrologic Modeling in Snowmelt Dominated Basins, Historical View of Snow and Climate, and the Role of Snow in Water Conservation, along with a poster paper display and vendor exhibit. Additional information for registration and lodging is on the Western Snow Conference web page at: <http://www.westernsnowconference.org/>

March 1, 2005 - Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2004 - Current Date)

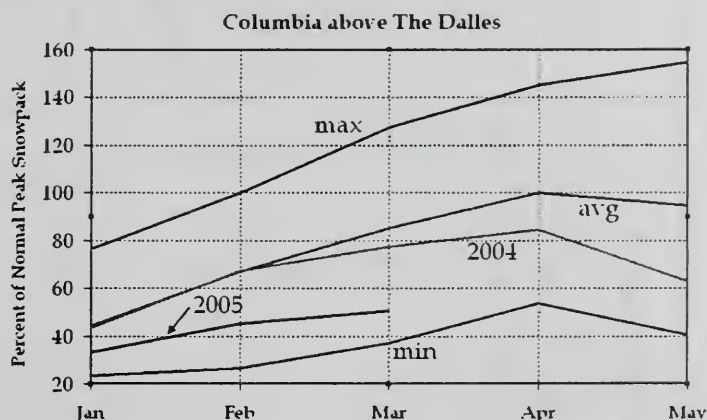


Columbia Basin Snowpack Summary

March 1, 2005

The combined Columbia Basin snowpack above The Dalles is currently at 59 percent of average. This is down from 68 percent on February 1. This compares to 91 percent at this time last year. The overall snowpack is at 50 percent of the average peak accumulation, compared to 78 percent last year. The snowpack is normally at 85 percent of its peak on March 1. For many snow measurement sites, this is the lowest year on record. Snow sites in the Columbia Basin where new record minimums were recorded are:

Roland Summit, ID (no snow)
 Moscow Mountain, ID (no snow)
 Copper Bottom, MT (no snow)
 Emery Creek, MT
 Intergaard, MT
 Nez Perce Pass, MT
 Lookout, ID
 Kellogg Peak, ID
 Canoe River, BC
 Stampede Pass, WA
 Olallie Meadows, WA
 Molson Creek, BC

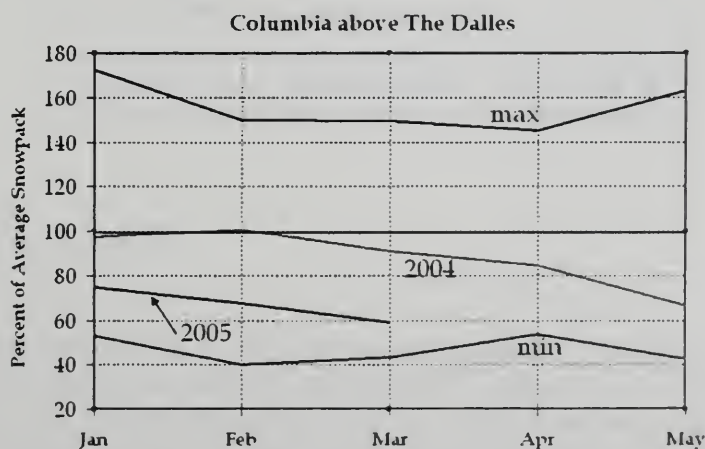


Near minimum measurements were recorded at several other snow sites.

The snowpack above Castlegar is at 69 percent of average, compared to 79 percent on February 1 and 84 percent last year. The snowpack above Grand Coulee is at 64 percent, compared to 74 percent on February 1 and 87 percent last year. The Snake River snowpack above Ice Harbor is at 56 percent compared to 63 percent on February 1 and 100 percent last last year.

The Columbia snowpack is in terrible shape. Much of the basin in the U.S. is snow free, except areas near the measured snow courses. Most of the snow courses are located in protected locations where snow tends to hold late into the season. Snow pack percentages by basin:

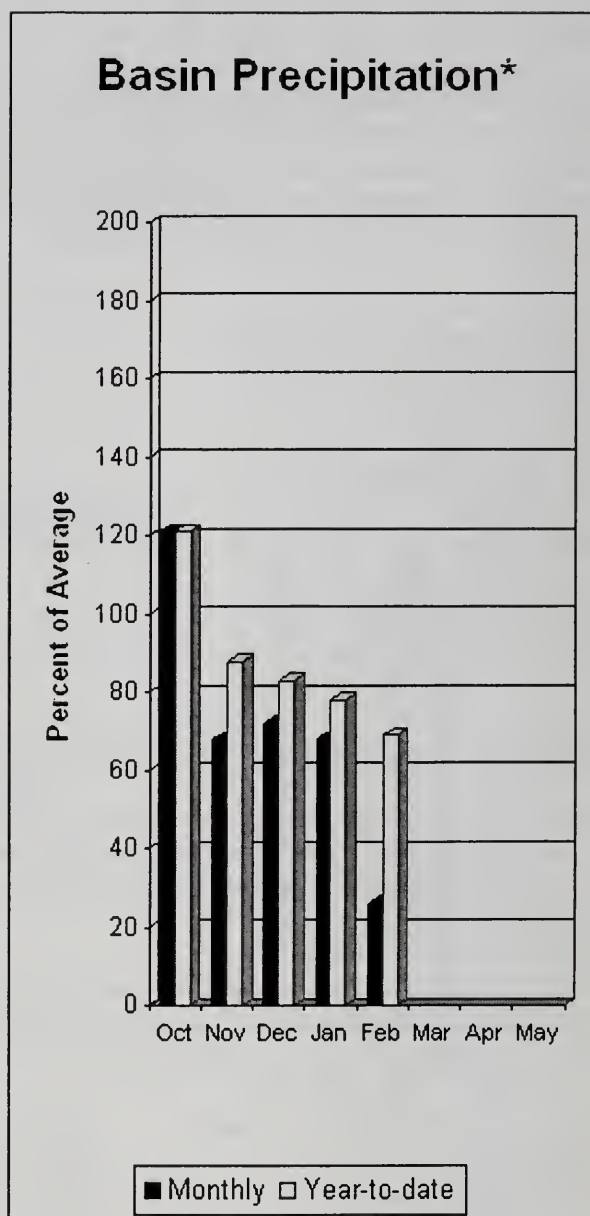
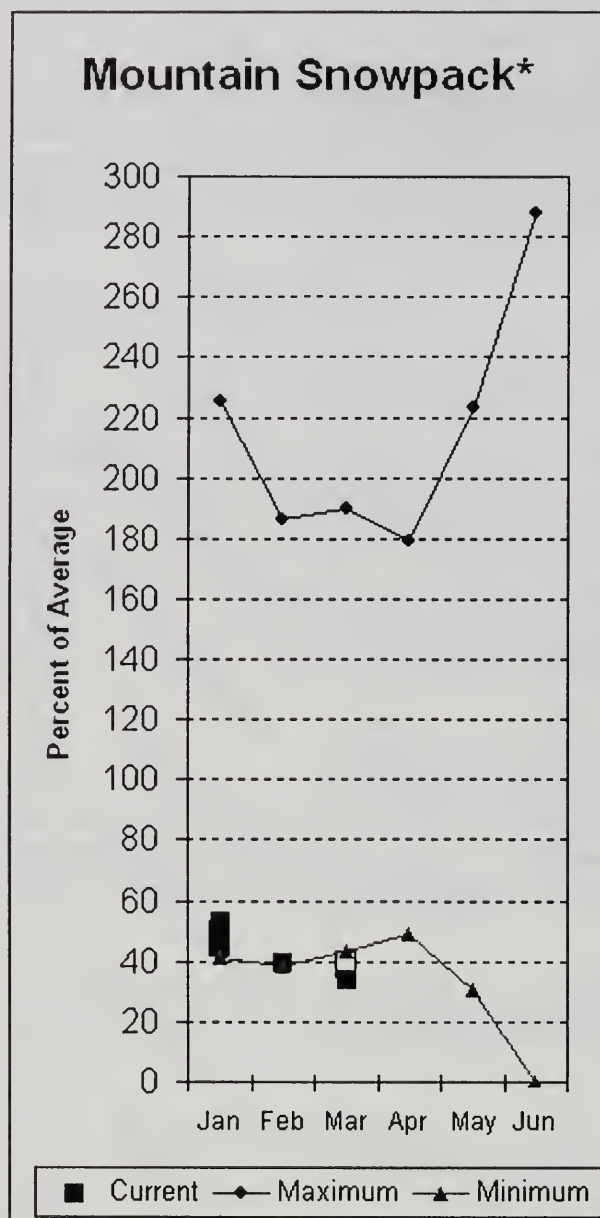
Upper Columbia River in Canada	78%
Kootenai River	56%
Pend Oreille River	53%
Kettle River	76%
Spokane River	38%
North Cascades	41%
Yakima River	23%
Snake River above American Falls	77%
Eastern Oregon Snake	48%
Salmon River	53%
Clearwater River	49%
John Day & Umatilla Rivers	40%
Deschutes River	55%
Boise, Payette, Wood, Lost, Southside Snake ...	59%



The February precipitation was much below average throughout the basin. Precipitation was between 20% to 30% in the South Cascades, 10% to 25% in the North Cascades, 20% to 30% in Eastern Oregon, 15% to 25% in the Boise Basin, 15% to 30% in the Salmon and Clearwater basins, 10% to 25% in the Upper Clark Fork, and 10% to 40% in the Flathead Basin. Measured precipitation at several SNOTEL sites was at record low values.

Expected streamflow runoff could rival (or exceed) the low levels observed during the very dry 1977 water year.

Spokane River Basin



*Based on selected stations

The March 1 forecasts for summer runoff within the Spokane River Basin are 42% of average near Post Falls and 48% at Long Lake. The Chamokane River near Long Lake forecasted to have 40% of average flows for the May-August period, setting a new record low flow by 700-acre feet. The forecast is based on a basin snowpack that is 34% of average and precipitation that is 69% of average for the water year. Precipitation for February was below normal at 26% of average. Streamflow on the Spokane River at Long Lake was 61% of average for February. March 1 storage in Coeur d'Alene Lake was 72,000-acre feet, 50% of average and 30% of capacity. Snowpack at Quartz Peak SNOTEL site was 24% of average with 4.7 inches of water content. Average temperatures in the Spokane basin were 1 degree above normal February and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Spokane River Basin

SPOKANE RIVER BASIN Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SPOKANE near Post Falls (2)	APR-SEP	879	1022	1120	42	1350	1700	2650
	APR-JUL	849	986	1080	42	1310	1640	2550
SPOKANE at Long Lake (2)	APR-JUL	1029	1202	1320	46	1580	1970	2850
	APR-SEP	1145	1339	1470	48	1750	2160	3070
CHAMOKANE CREEK near Long Lake	MAY-AUG	2.5	3.5	4.1	40	5.7	8.0	10.2

SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
COEUR D'ALENE	238.5	72.3	99.5	144.9

SPOKANE RIVER BASIN Watershed Snowpack Analysis - March 1, 2005

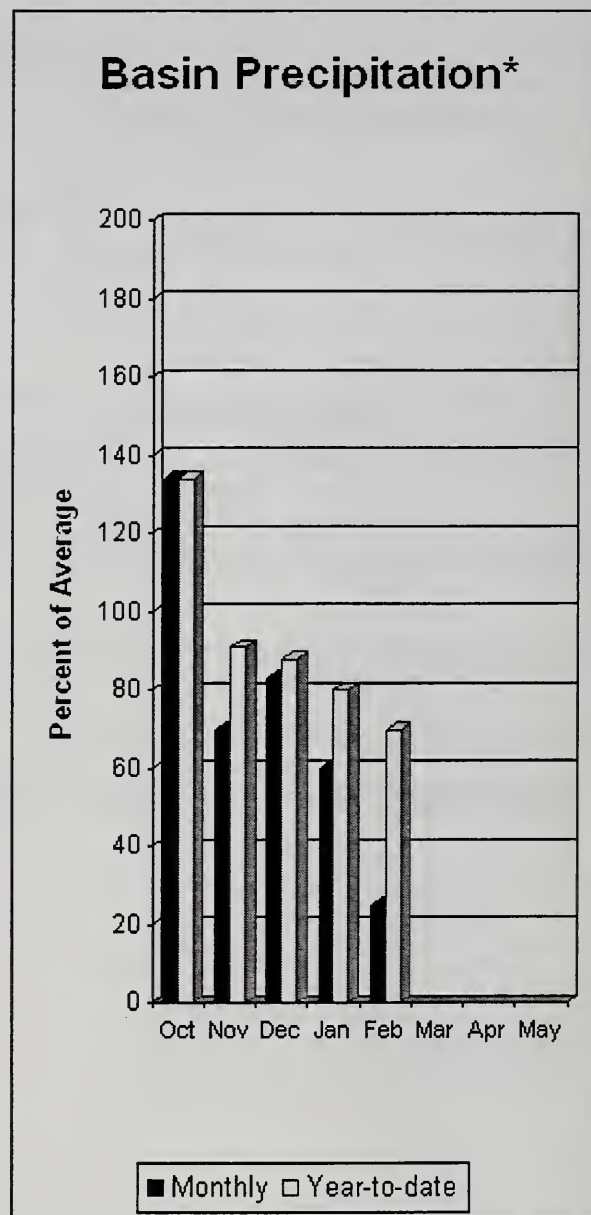
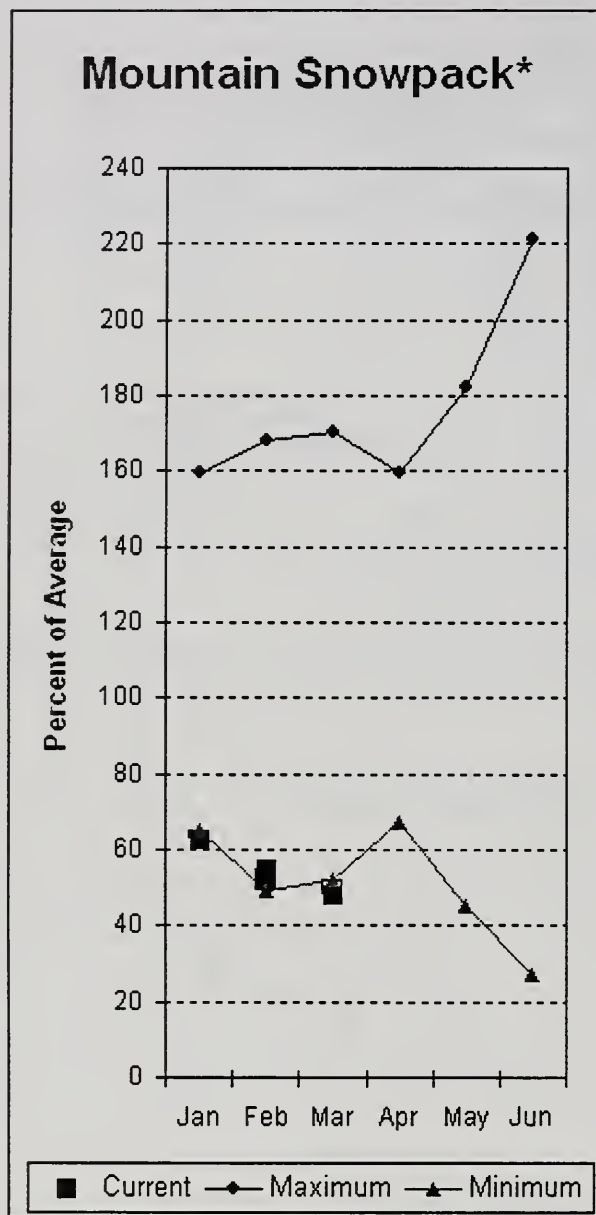
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
SPOKANE RIVER	15	32	32
NEWMAN LAKE	2	16	17

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

Colville - Pend Oreille River Basins



*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 78%, Colville at Kettle Falls is 23%, and Priest River near the town of Priest River is 57%. February streamflow was 105% of average on the Pend Oreille River, 140% on the Columbia at the International Boundary and 327% on the Kettle River. March 1 snow cover was 48% of average in the Pend Oreille Basin River Basin and 78% in the Kettle River Basin (including Canadian data). Bunchgrass Meadows SNOTEL site had 14.7 inches of snow water on the snow pillow. Normally Bunchgrass would have 24.4 inches on March 1. Precipitation during February was 25% of average, bringing the year-to-date precipitation to 70% of average. Average temperatures were 1 degree above normal for February and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.

Colville - Pend Oreille River Basins

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<----- Drier ----- Future Conditions ----- Wetter ----->						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
PEND OREILLE Lake Inflow (2)	APR-JUL	4797	5531	6030	48	6990	8400	12700
	APR-SEP	5203	6023	6580	47	7630	9180	13900
PRIEST near Priest River (1,2)	APR-JUL	404	440	465	57	510	605	815
	APR-SEP	397	455	495	57	565	725	870
PEND OREILLE bl Box Canyon (2)	APR-JUL	5052	5777	6270	49	7120	8370	12900
	APR-SEP	5333	6230	6840	49	7890	9440	14100
COLVILLE at Kettle Falls	APR-SEP	23	29	32	23	47	70	141
	APR-JUL	21	26	29	23	43	64	128
KETTLE near Laurier	APR-SEP	1230	1410	1540	78	1670	1850	1970
	APR-JUL	1180	1350	1460	78	1570	1740	1870
COLUMBIA at Birchbank (1,2)	APR-JUL	26370	29829	31400	90	32970	36430	34900
	APR-SEP	32801	37133	39100	90	41070	45400	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	38443	45497	48700	76	51900	58960	64000
	APR-JUL	32000	37914	40600	76	43290	49200	53800

COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of February

COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

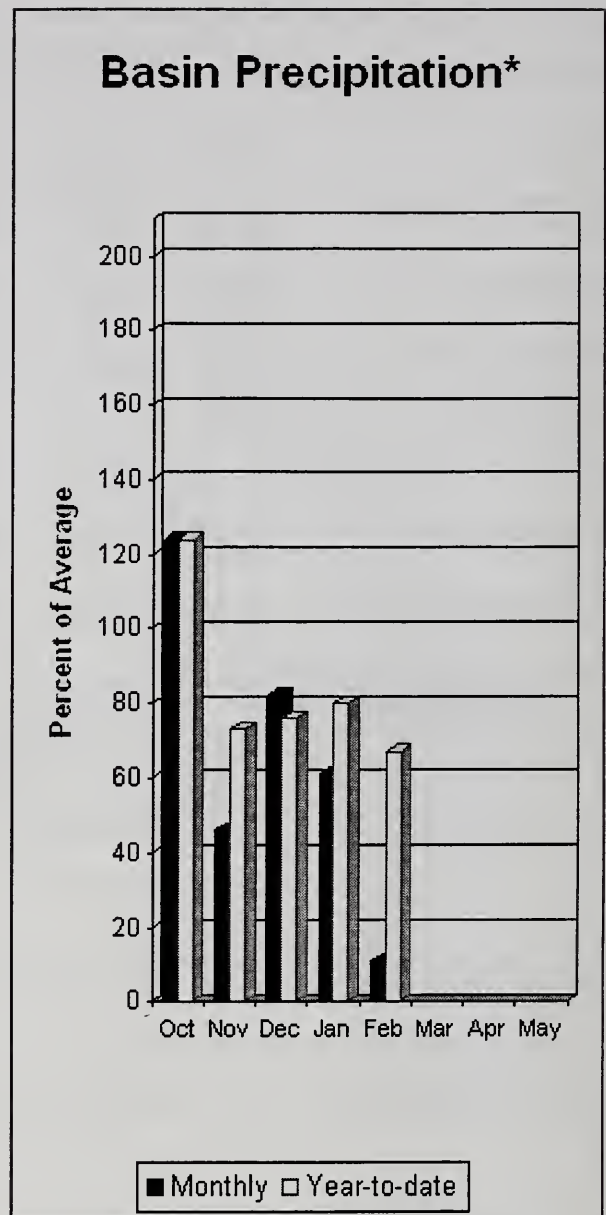
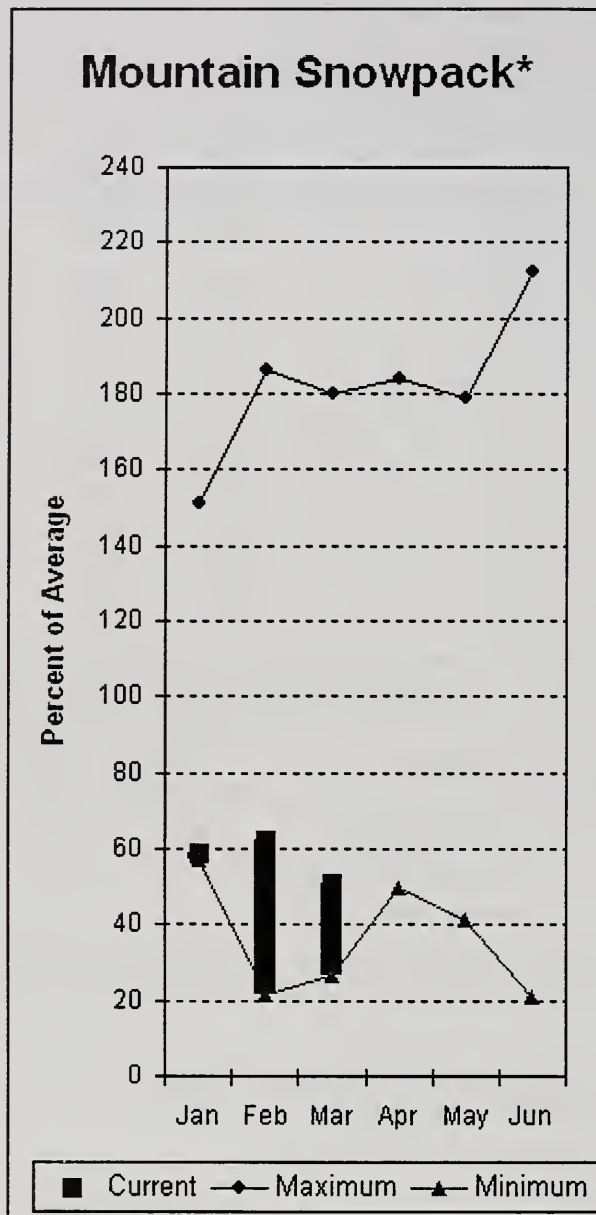
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROOSEVELT		NO REPORT			COLVILLE RIVER	0	58	0
BANKS		NO REPORT			PEND OREILLE RIVER	11	49	47
					KETTLE RIVER	8	84	78

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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Okanogan - Methow River Basins



*Based on selected stations

Summer runoff average forecast for the Okanogan River at Malott is 44%, Methow River is 31% and Salmon Creek is 28%. The Similkameen River is projected to set a new record low of only 41% of normal flows. March 1 snow cover on the Okanogan was 61% of average, Omak Creek was 38% and the Methow was 35%. February precipitation in the Okanogan-Methow was 11% of average, with precipitation for the water year at 67% of average. February streamflow for the Methow River was 166% of average, 200% for the Okanogan River and 265% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 4.7 inches. Average for this site is 10.1 inches on March 1. Combined storage in the Conconully Reservoirs was 11,000-acre feet, which is 47% of capacity and 65% of the March 1 average. Temperatures were 2-3 degrees above normal for February and 1-2 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Okanogan - Methow River Basins

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>		Chance Of Exceeding *				30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SIMILKAMEEN near Nighthawk (1)	APR-JUL	456	518	560	42	670	900	1350
	APR-SEP	482	552	600	41	720	1000	1450
OKANOGAN near Tonasket (1)	APR-JUL	479	611	700	44	890	1310	1580
	APR-SEP	559	691	780	44	970	1390	1770
OKANOGAN at Malott (1)	APR-JUL	484	619	710	43	910	1340	1635
	APR-SEP	569	704	795	44	995	1425	1826
Salmon Creek nr Conconully	APR-JUL	1.1	3.1	5.2	28	7.8	12.5	18.7
	APR-SEP	1.1	3.3	5.5	28	8.3	13.4	19.7
TOATS COULEE CREEK nr Loomis	APR-JUL	10.6	15.0	18.0	64	22	30	28
	APR-SEP	12.4	16.7	19.6	65	24	31	30
Beaver Creek blw SF nr Twisp	APR-SEP	3.1	4.2	5.0	41	6.9	9.8	12.1
	APR-JUL	2.6	3.7	4.5	41	6.4	9.2	11.1
METHOW RIVER near Pateros	APR-SEP	228	271	300	31	400	550	985
	APR-JUL	239	260	275	30	325	400	910

OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of February

OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

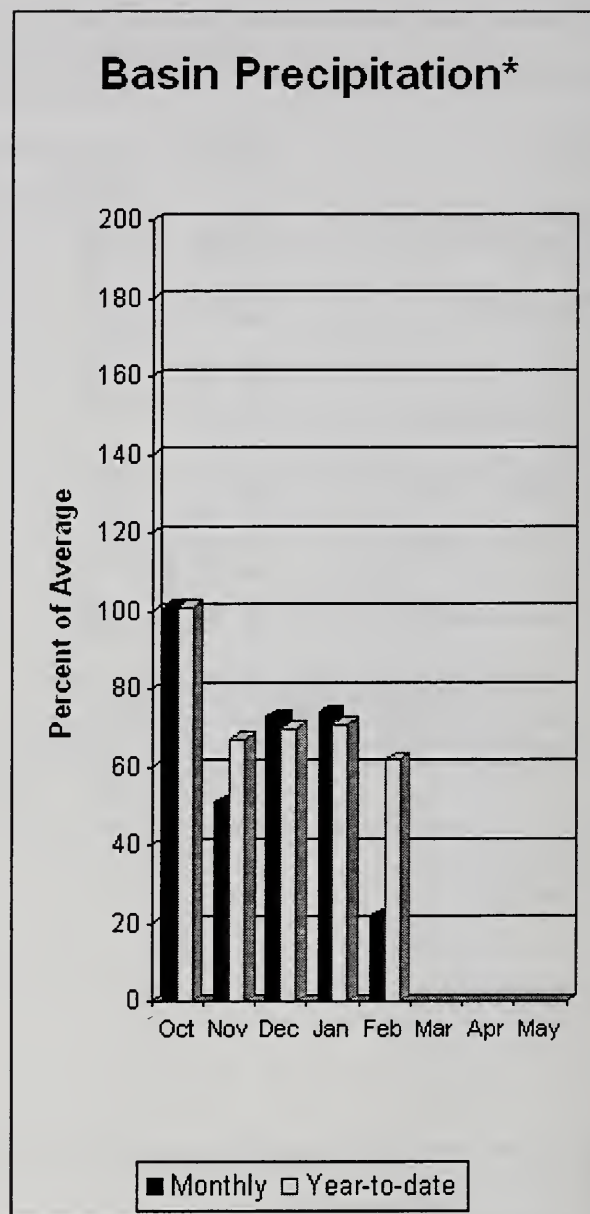
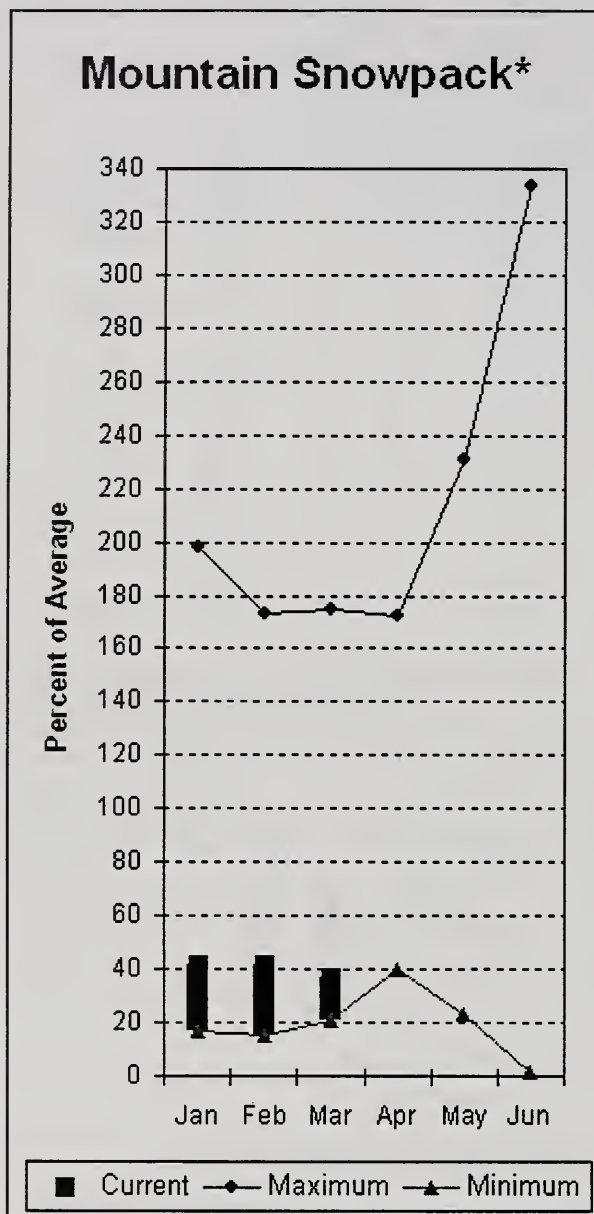
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
SALMON LAKE	10.5	6.2	---	8.4	OKANOGAN RIVER	23	69	60
CONCONULLY RESERVOIR	13.0	4.9	---	8.7	OMAK CREEK	3	48	38
					SANPOIL RIVER	2	69	67
					SIMILKAMEEN RIVER	4	46	41
					TOATS COULEE CREEK	1	92	71
					CONCONULLY LAKE	3	47	43
					METHOW RIVER	5	46	35

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Wenatchee - Chelan River Basins



*Based on selected stations

Precipitation during February was 22% of average in the basin and 62% for the year-to-date. Runoff for Entiat River is forecast to be 40% of average for the summer. The April-September average forecast for Chelan River is 48%, Wenatchee River at Plain is 50%, Stehekin River is 58% and Icicle Creek is 55%. Stemilt and Squilchuck creeks are all forecasted to have below average flows this year as well. Chelan, Stehekin, Wenatchee and Icicle are all projected to set new record low flows this season. February average streamflows on the Chelan River were 158% and on the Wenatchee River 128%. March 1 snowpack in the Wenatchee River Basin was 28% of average; the Chelan, 38%; the Entiat, 44%; Stemilt Creek, 50% and Colockum Creek, 23%. Reservoir storage in Lake Chelan was 435,000-acre feet, 174% of March 1 average and 64% of capacity. Lyman Lake SNOTEL had the most snow water with 25.6 inches of water. This site would normally have 55.1 inches on March 1. Temperatures were 1 degree above normal for February and 1 degree above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Wenatchee - Chelan River Basins

Streamflow Forecasts - March 1, 2005

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CHELAN RIVER near Chelan	APR-SEP	494	542	575	48	640	740	1190
	APR-JUL	442	483	510	49	565	645	1050
STEHEKIN near STEHEKIN	APR-SEP	422	459	485	58	530	595	830
	APR-JUL	360	390	410	59	445	495	700
ENTIAT RIVER nr Ardenvoir	APR-SEP	81	89	95	40	109	129	240
	APR-JUL	72	80	85	40	98	116	215
WENATCHEE at Plain	APR-SEP	445	540	605	50	670	765	1200
	APR-JUL	425	495	545	51	595	665	1080
WENATCHEE R. at Peshastin	APR-SEP	394	645	815	50	985	1235	1640
	APR-JUL	253	540	735	50	930	1215	1480
STEMILT CK nr Wenatchee (miner's in)	MAY-SEP	22	49	67	49	85	112	138
ICICLE CREEK near Leavenworth	APR-SEP	154	175	190	55	205	225	345
	APR-JUL	144	163	176	55	191	206	320
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	42656	48101	51800	75	55500	60940	69500
	APR-JUL	33806	39578	43500	74	47420	53190	59000

WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of February

WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

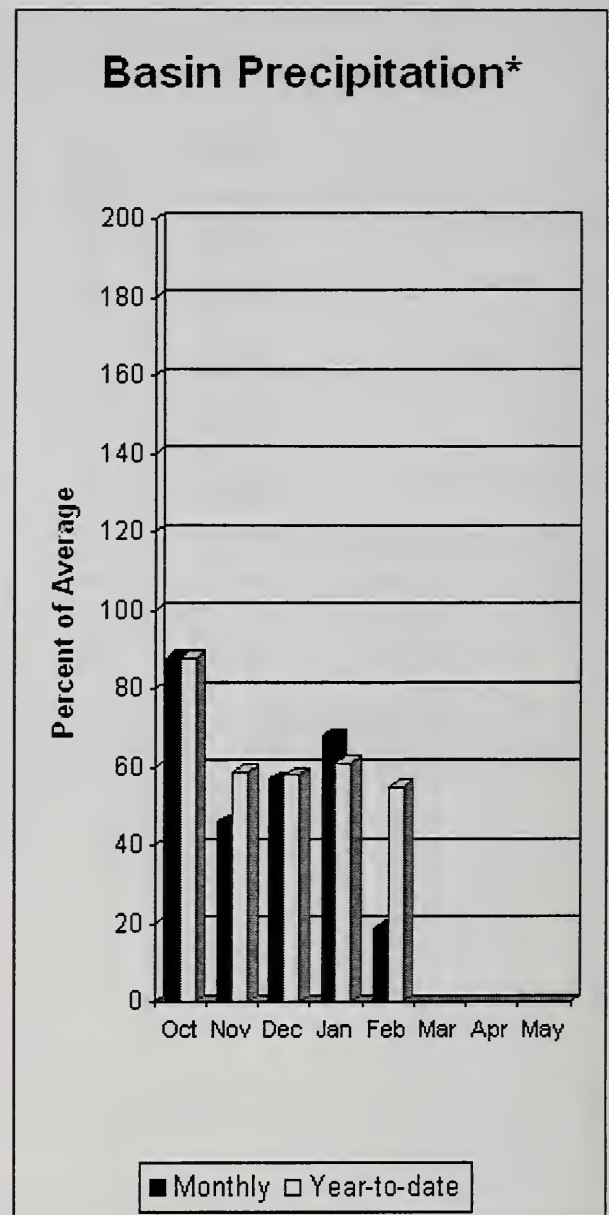
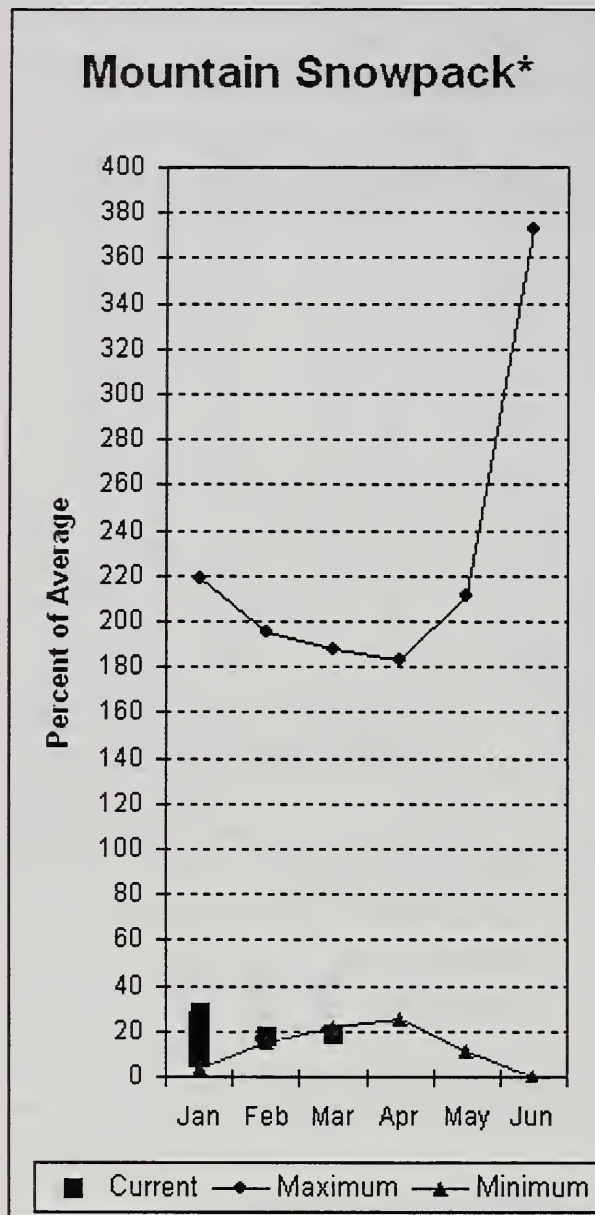
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	435.0	---	250.1	CHELAN LAKE BASIN	4	56	38
					ENTIAT RIVER	2	54	44
					WENATCHEE RIVER	13	34	28
					STEMILT CREEK	1	44	50
					COLOCKUM CREEK	2	22	23

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Upper Yakima River Basin



*Based on selected stations

March 1 reservoir storage for the Upper Yakima reservoirs was 508,000-acre feet, 102% of average. Forecasts for the Yakima River at Cle Elum are 47% of average and the Teanaway River near Cle Elum is at 32%. Lake inflows are all forecasted to be near that same range this summer and are projected to set new record low flows. February streamflows within the basin were Yakima near Cle Elum at 58% and Cle Elum River near Roslyn at 74%. March 1 snowpack was 19% based upon 8 snow courses and SNOTEL readings within the Upper Yakima Basin. Precipitation was 19% of average for February and 55% year-to-date for water. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Upper Yakima River Basin

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KEECHELUS LAKE INFLOW	APR-JUL	38	50	58	48	66	78	121
	APR-SEP	40	54	64	48	74	88	133
KACHESS LAKE INFLOW	APR-JUL	30	41	49	44	57	68	111
	APR-SEP	33	45	53	44	61	73	120
CLE ELUM LAKE INFLOW	APR-JUL	155	180	195	48	210	235	410
	APR-SEP	165	195	215	48	235	265	450
YAKIMA at Cle Elum	APR-JUL	300	355	390	48	425	480	820
	APR-SEP	320	385	425	47	465	530	900
TEANAWAY near Cle Elum	APR-JUL	30	39	46	32	53	62	143
	APR-SEP	31	40	47	32	54	63	146

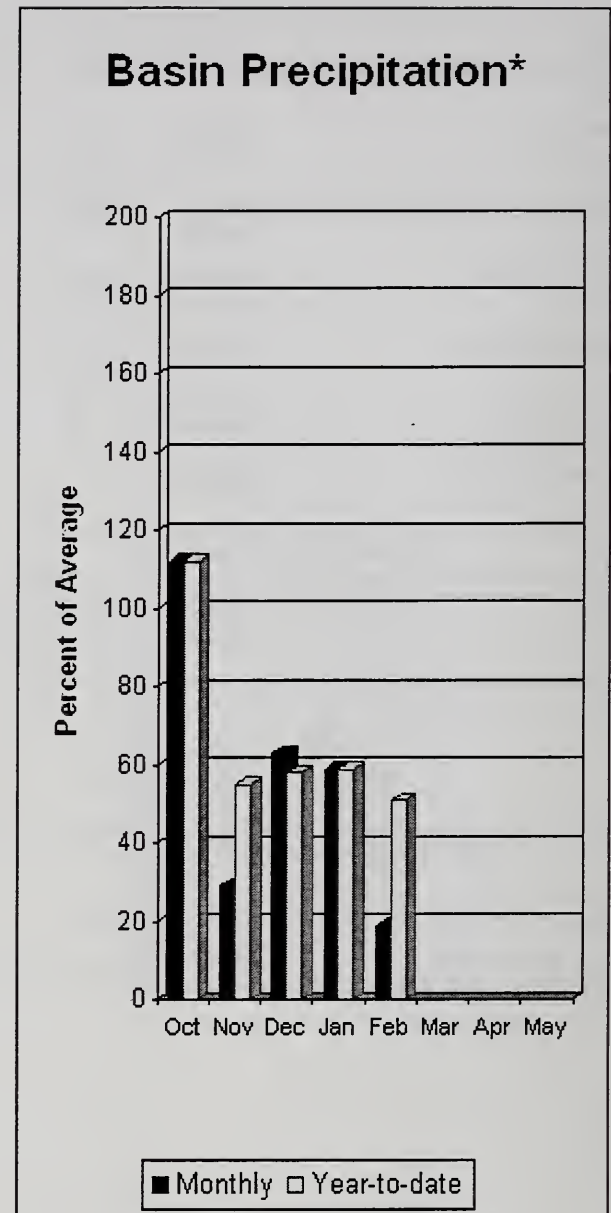
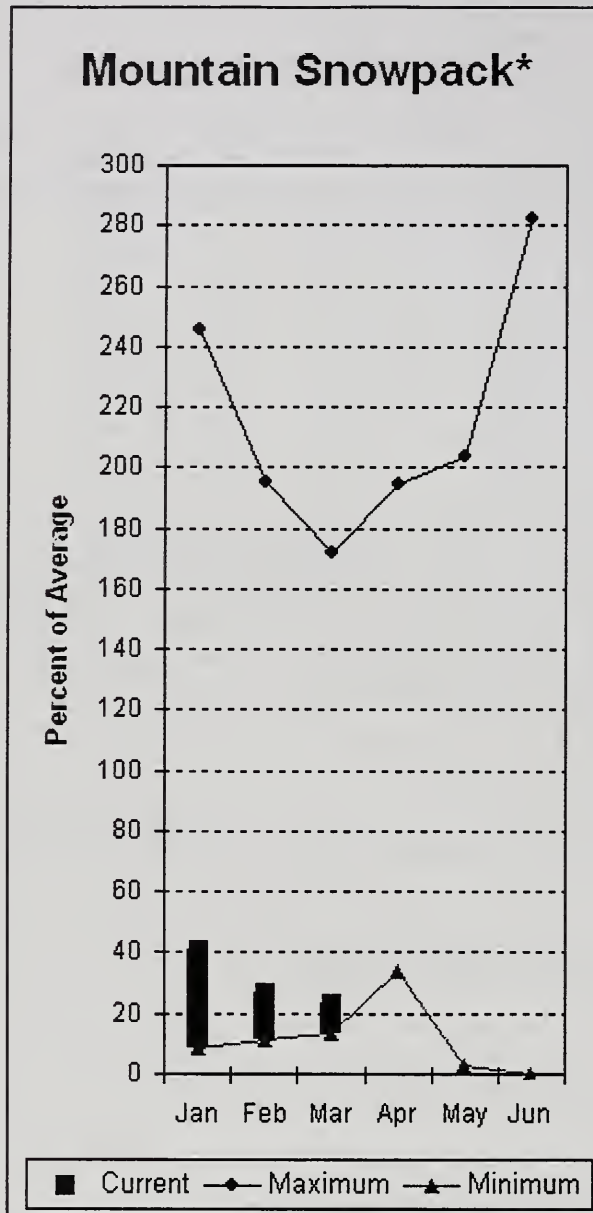
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	103.3	---	102.4	UPPER YAKIMA RIVER	12	22	19
KACHESS	239.0	130.5	---	154.7				
CLE ELUM	436.9	274.3	---	241.4				

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

Lower Yakima River Basin



*Based on selected stations

February average streamflows within the basin were: Yakima River near Parker, 51%; Naches River near Naches, 52%; and Yakima River at Kiona, 37%. March 1 reservoir storage for Bumping and Rimrock reservoirs was 181,000-acre feet, 132% of average. Forecast averages for Yakima River near Parker are 41%; American River near Nile, 42%; Ahtanum Creek, 28%; and Klickitat River near Glenwood, 40%. All streams except the Ahtanum and the Klickitat are expected to set new record low flows for the season. March 1 snowpack was 23% based upon 13 snow courses and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 30 % of average. Precipitation was 19% of average for February and 51% year-to-date for water. Temperatures were near normal for February and 1 degree above average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they March differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.

Lower Yakima River Basin

Streamflow Forecasts - March 1, 2005

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BUMPING LAKE INFLOW	APR-SEP	37	51	60	46	69	83	132
	APR-JUL	34	47	55	45	63	76	122
AMERICAN RIVER near Nile	APR-SEP	33	43	49	42	55	65	118
	APR-JUL	30	39	45	42	51	60	108
RIMROCK LAKE INFLOW	APR-SEP	83	104	119	50	134	155	240
	APR-JUL	73	89	100	49	111	127	205
NACHES near Naches	APR-SEP	265	292	310	37	360	430	835
	APR-JUL	239	263	280	37	325	390	760
AHTANUM CREEK at Union Gap	APR-SEP	5.4	7.6	9.1	28	14.4	22	32
	APR-JUL	4.3	6.3	7.7	26	12.9	21	30
YAKIMA near Parker	APR-SEP	525	685	795	41	905	1065	1920
	APR-JUL	485	625	715	41	805	945	1730
KLICKITAT near Glenwood	APR-JUN	31	44	52	40	60	73	129
	APR-SEP	36	53	65	40	77	94	163

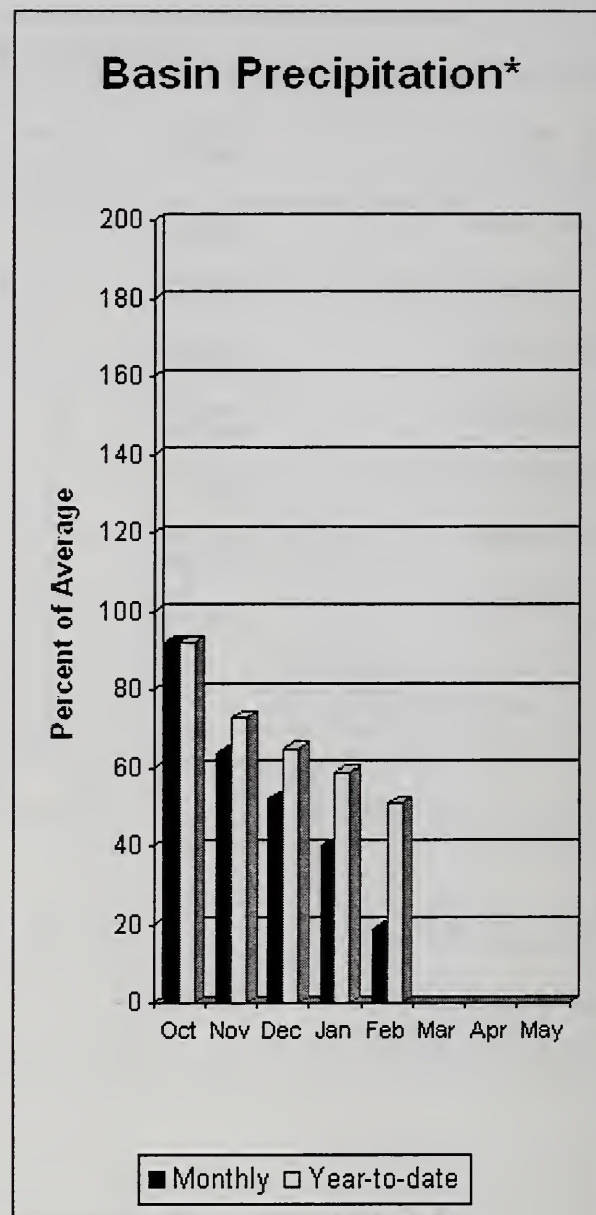
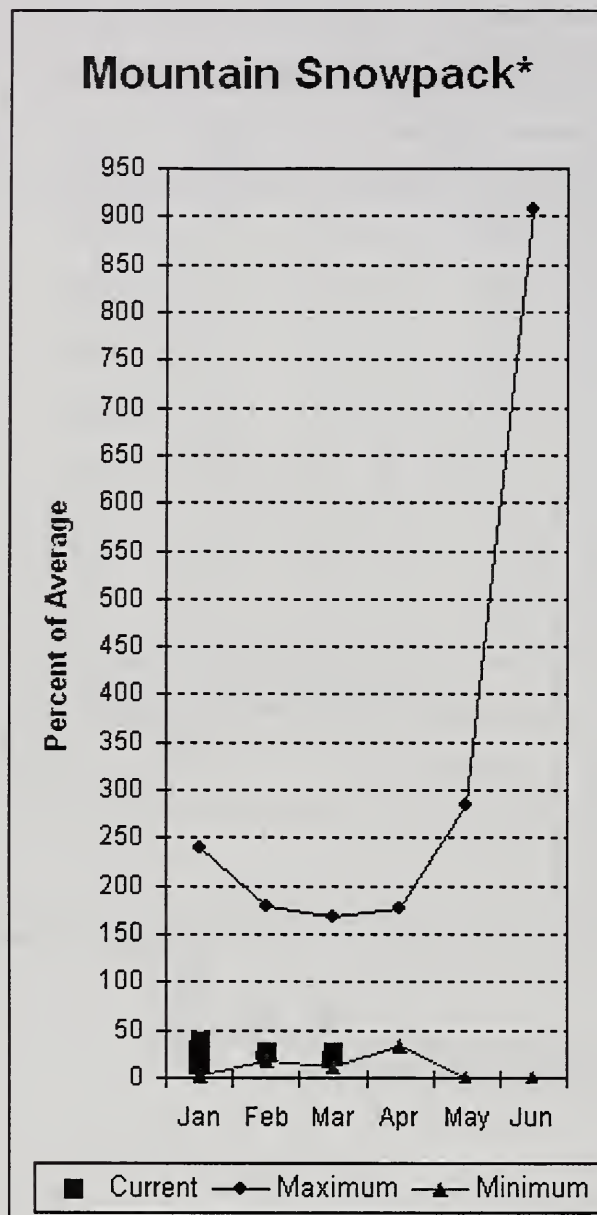
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2005		
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr Average
		This Year	Last Year	Avg			
BUMPING LAKE	33.7	27.7	---	11.5			
RIMROCK	198.0	153.7	---	126.1			

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Walla Walla River Basin



*Based on selected stations

February precipitation was 19% of average, maintaining the year-to-date precipitation at 51% of average. Snowpack in the basin was 27% of average. Streamflow forecasts are 22% of average for Mill Creek and 69% for the SF Walla Walla near Milton-Freewater. Mill Creek will set a new record low flow if conditions persist. February streamflow was 32% of average for the Walla Walla River. Average temperatures were near normal for February and 1 degree above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Walla Walla River Basin

Streamflow Forecasts - March 1, 2005

		<<----- Drier ----- Future Conditions ----- Wetter ----->>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
MILL CREEK at Walla Walla	APR-SEP	2.4	3.3	4.0	22	7.0	11.4	18.4
	APR-JUL	2.2	3.1	3.7	20	6.7	11.1	18.2
SF WALLA WALLA near Milton-Freewater	APR-JUL	27	33	37	69	41	47	54
	APR-SEP	35	41	46	69	51	57	67

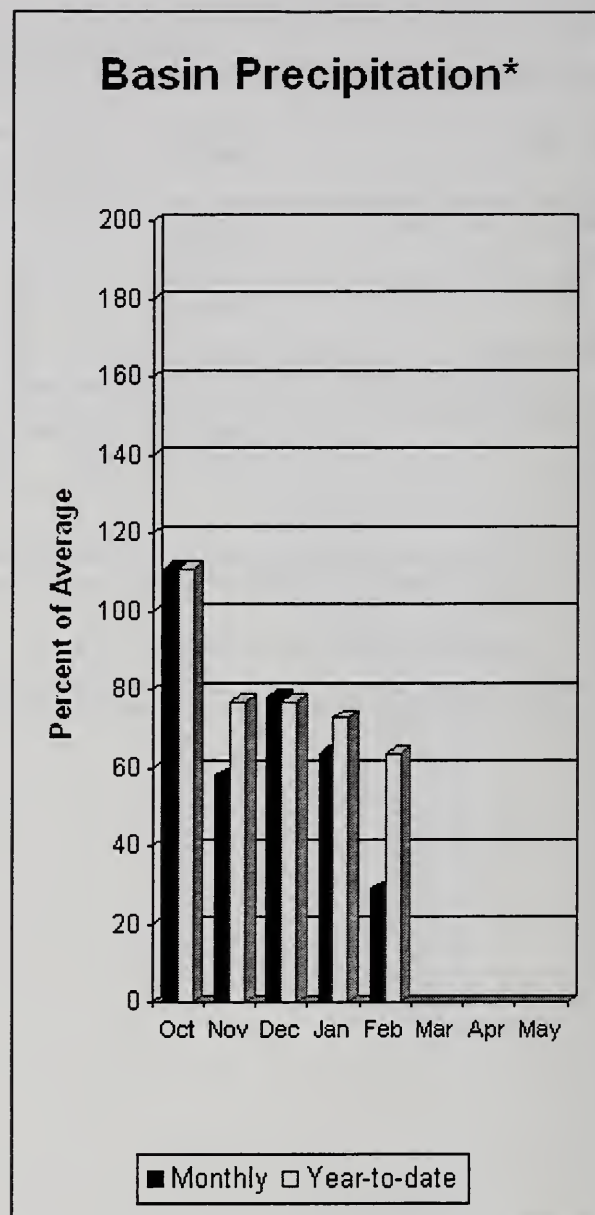
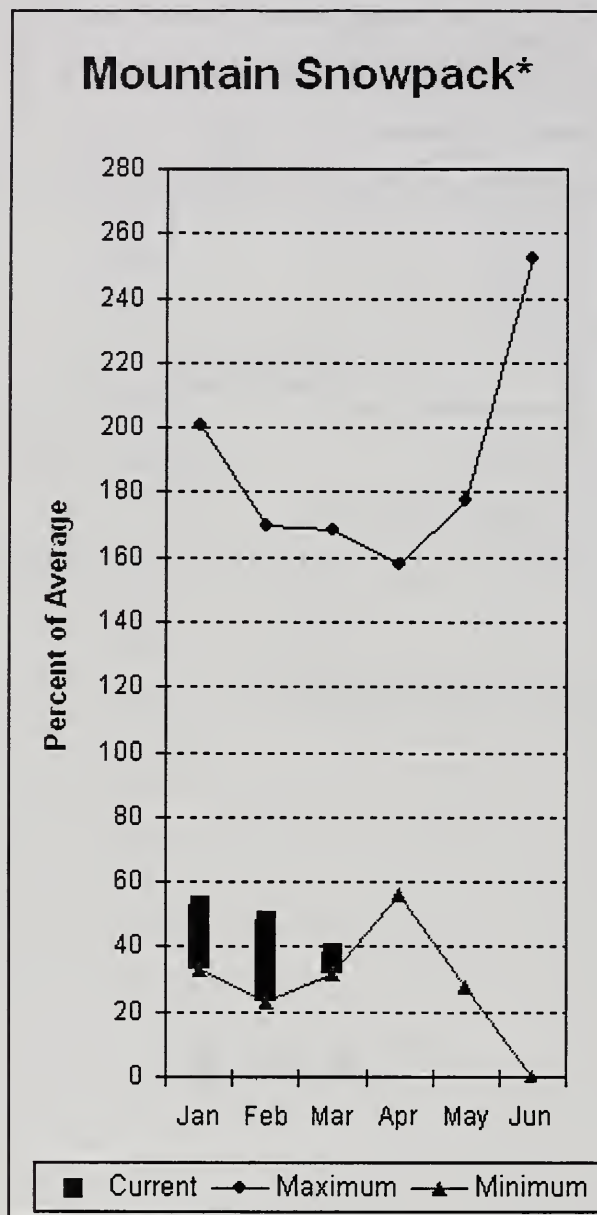
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of February					WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - March 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	27	27

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Lower Snake River Basin



*Based on selected stations

The April - September forecast is for 50% for Clearwater River at Spalding (a new record low). The Snake and Grande Ronde rivers can expect summer flows to be about 47% and 52% of normal respectively. February precipitation was 29% of average, bringing the year-to-date precipitation to 64% of average. March 1 snowpack readings averaged 38% of normal. February streamflow was 51% of average for Snake River below Lower Granite Dam and 31% for Grande Ronde River near Troy. Average temperatures were near normal for February and 2 degrees above normal for the water year.

For more information contact your local Natural Resources Conservation Service office.

Lower Snake River Basin

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
GRANDE RONDE at Troy (1)	MAR-JUL	375	678	815	52	952	1255	1580
	APR-SEP	316	590	715	52	840	1115	1370
CLEARWATER at Spalding (1,2)	APR-JUL	2785	3348	3730	50	4480	6130	7430
	APR-SEP	2976	3550	3940	50	4690	6340	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	2690	7689	9960	46	12230	17230	21600
	APR-SEP	3031	8649	11200	47	13750	19370	24100

LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of February

LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - March 1, 2005

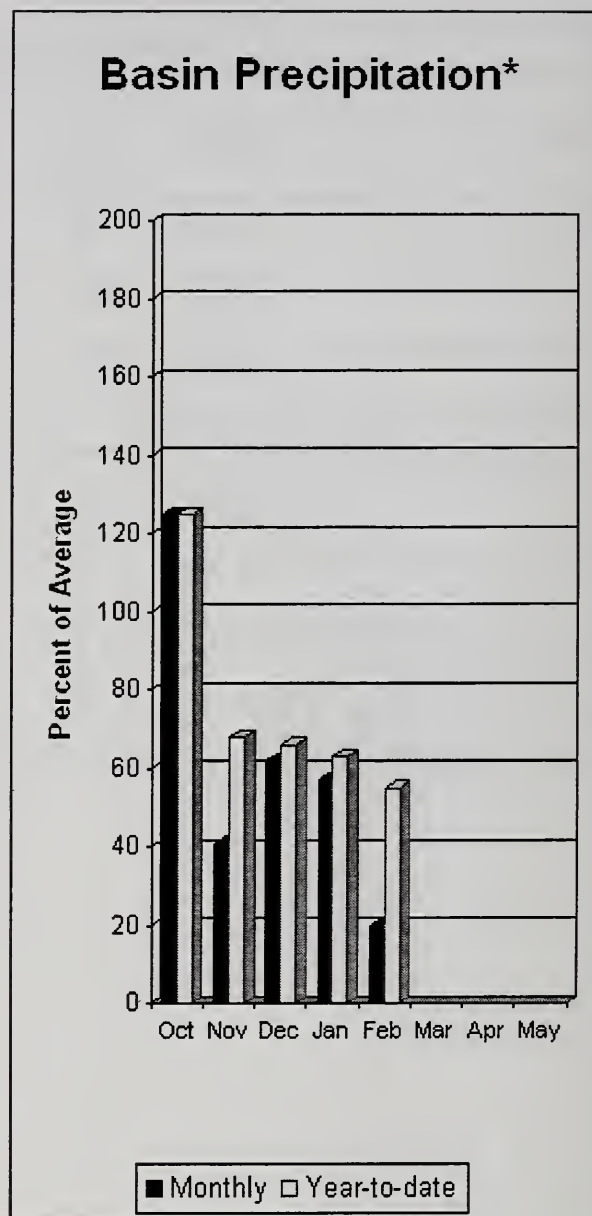
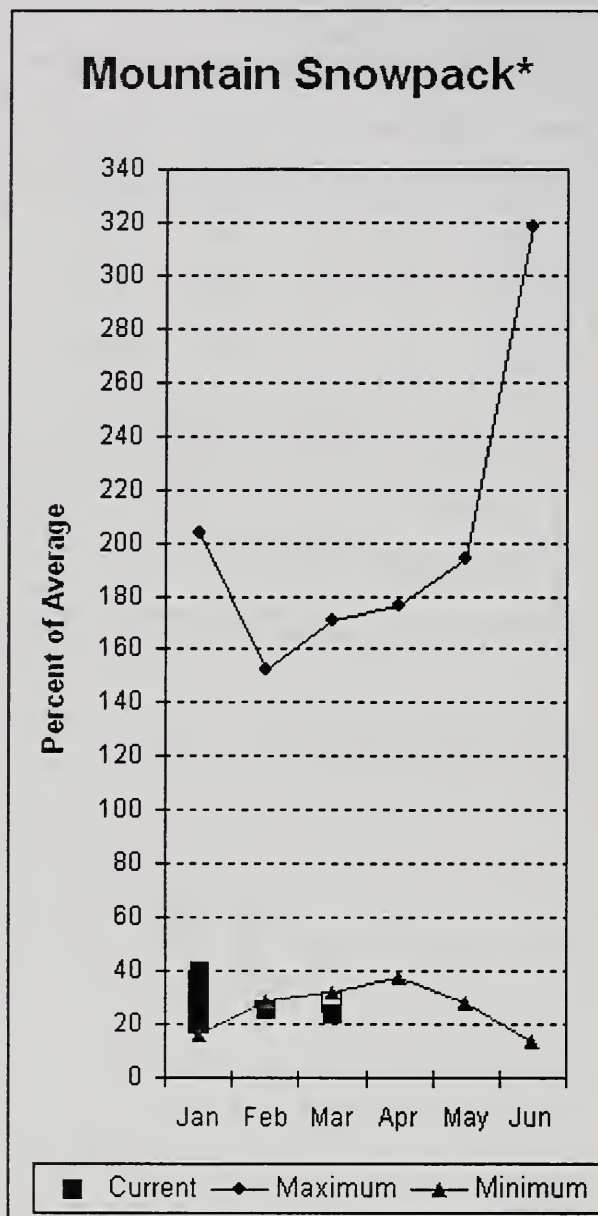
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LOWER SNAKE, GRANDE RONDE	12	38	38

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Cowlitz - Lewis River Basins



*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 52% and Cowlitz River at Castle Rock, 57% of average. The Columbia at The Dalles is forecasted to have 62% of average flows this summer. February average streamflow for Cowlitz River was 38% and 37% for Lewis River. The Columbia River at The Dalles was 83% of average. February precipitation was 20% of average and the water-year average was 55%. March 1 snow cover for Cowlitz River was 25%, and Lewis River was 23% of average. Average temperatures were near normal during February and 2 degrees above normal throughout the water year.

For more information contact your local Natural Resources Conservation Service office.

Cowlitz - Lewis River Basins

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	245	415	530	51	645	815	1031
	APR-SEP	325	495	615	52	735	905	1176
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	80	652	1040	54	1430	2000	1922
	APR-JUL	17.0	528	915	54	1300	1870	1689
COWLITZ R. at Castle Rock (2)	APR-SEP	162	965	1510	57	2055	2860	2639
	APR-JUL	496	981	1310	57	1640	2125	2295
Klickitat near Glenwood	APR-JUN	31	44	52	40	60	73	129
	APR-SEP	36	53	65	40	77	94	163
COLUMBIA R. at The Dalles (2)	APR-SEP	46988	55093	60600	62	66110	74210	98600
	APR-JUL	36141	45405	51700	61	57990	67260	84600

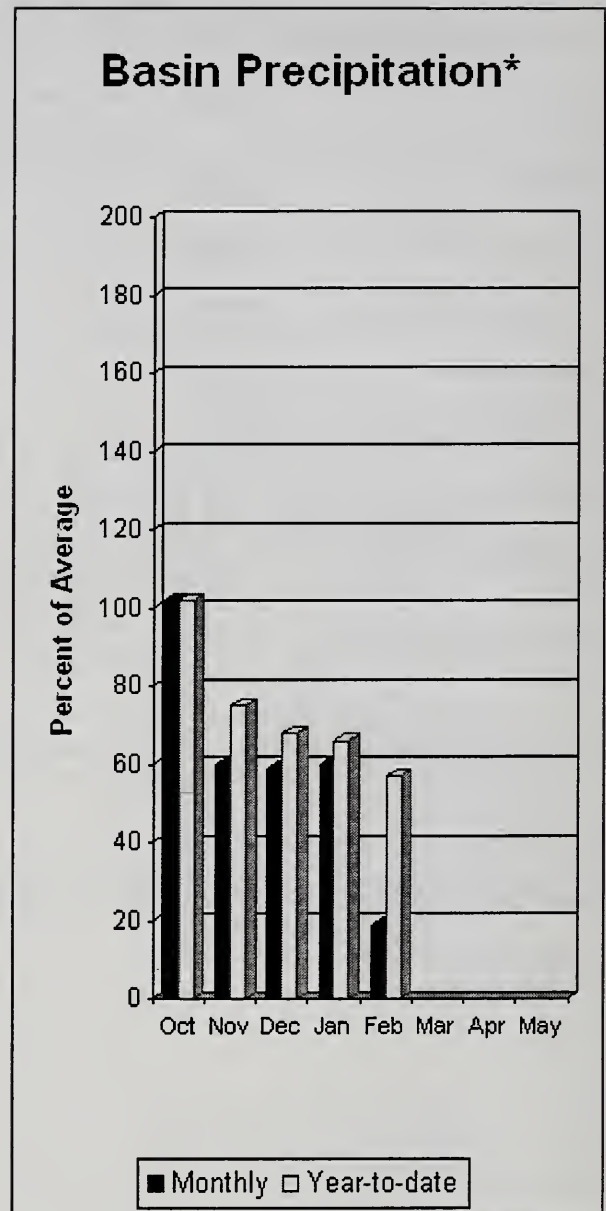
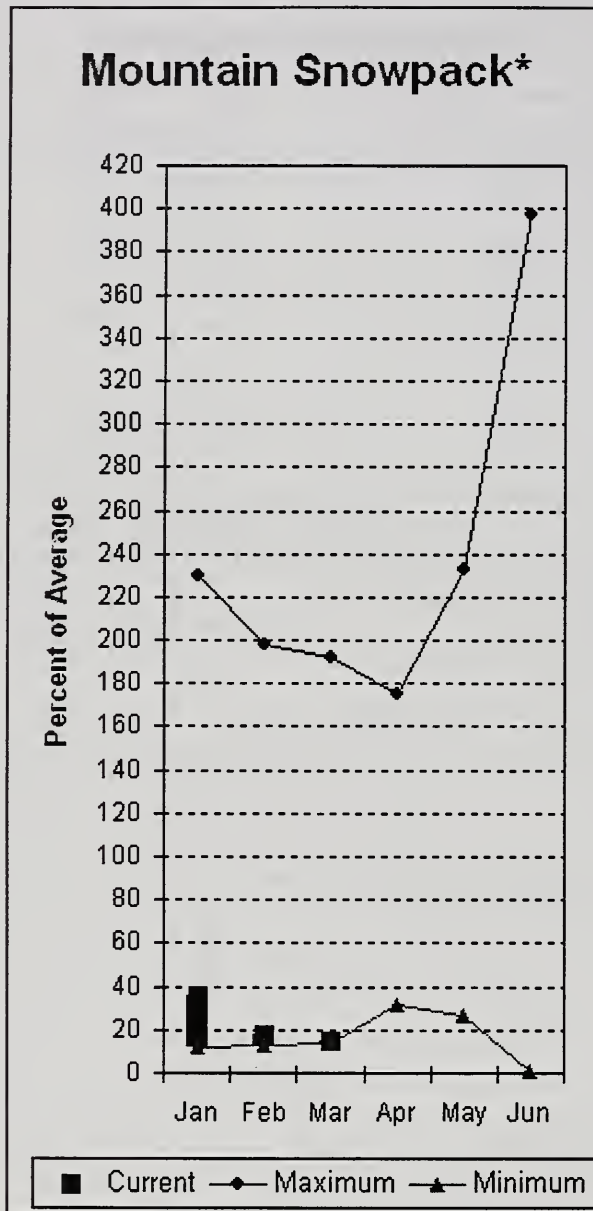
COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of February					COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - March 1, 2005			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					LEWIS RIVER	4	20	23
					COWLITZ RIVER	5	23	25

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

White - Green River Basins



*Based on selected stations

Summer runoff is forecast to be 47% of normal for the Green River below Howard Hanson Dam and 52% for the White River near Buckley. Both rivers are expected to set new record low flows this season. March 1 snowpack was 27% of average in both White River and Puyallup River basins and 4% in the Green River Basin. Water content on March 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 8.5 inches. This site has a March 1 average of 29.5 inches. February precipitation was 19% of average, bringing the water year-to-date to 57% of average for the basins. Average temperatures in the area were 1 degree below normal for February and 1 degree above normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.

White - Green - Puyallup River Basins

Streamflow Forecasts - March 1, 2005

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	===== Chance Of Exceeding * =====						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WHITE near Buckley (1,2)	APR-JUL	140	200	230	52	260	320	440
	APR-SEP	170	245	280	52	315	390	534
GREEN below Howard Hanson (1,2)	APR-JUL	30	82	105	43	128	180	243
	APR-SEP	50	102	125	47	148	201	268

WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of February

WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

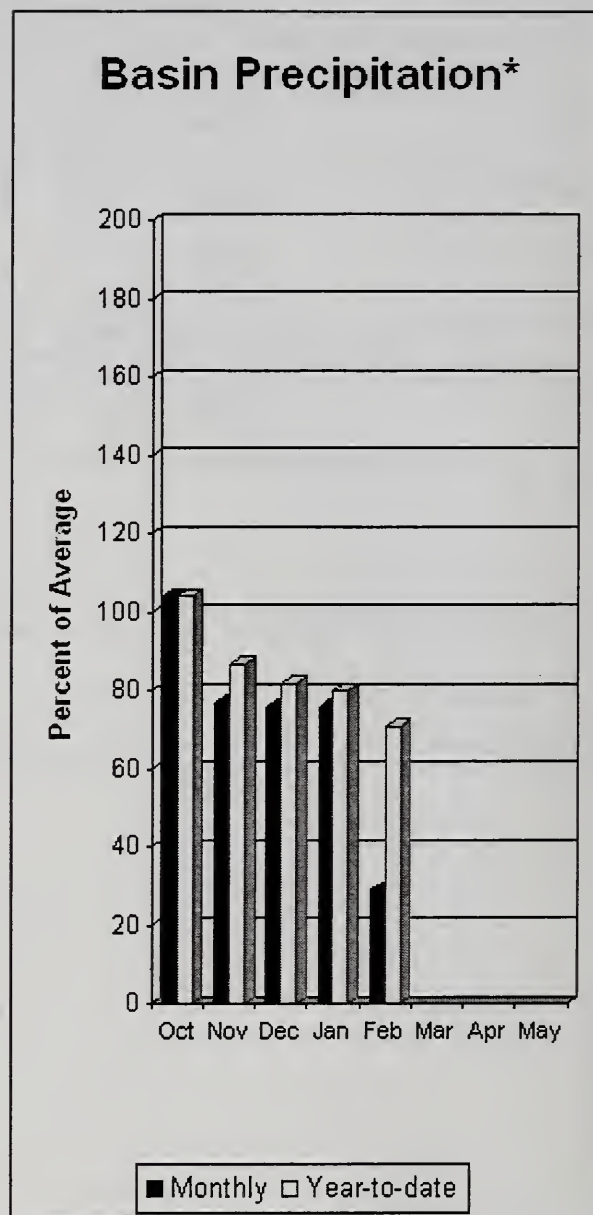
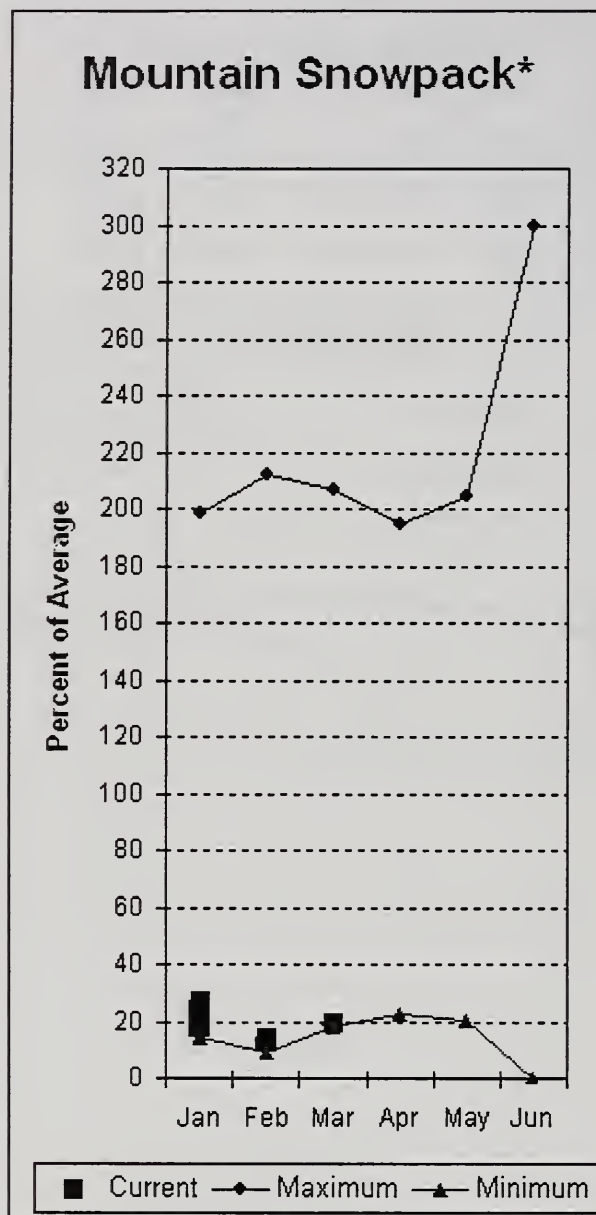
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	2	28	27
					GREEN RIVER	7	4	4
					PUYALLUP RIVER	2	28	27

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

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 (2) - The value is natural volume - actual volume may be affected by upstream water management.

Central Puget Sound River Basins



*Based on selected stations

Forecast for spring and summer flows are: 50% for Cedar River near Cedar Falls; 46% for Rex River; 56% for South Fork of the Tolt River; and 45% for Cedar River at Cedar Falls. The Rex and Tolt Rivers are both projected to see record low flows this season if conditions persist. Basin-wide precipitation for February was 29% of average, bringing water-year-to-date to 71% of average. March 1 average snow cover in Cedar River Basin was 8%, Tolt River Basin was 22%, Snoqualmie River Basin was 18%, and Skykomish River Basin was 23%. Olallie Meadows SNOTEL site, at 3960 feet, had 7.1 inches of water content. Average March 1 water content is 48.9 inches at Olallie Meadows. Temperatures were 1 degree below average for February and 1 degree above normal for the water-year.

For more information contact your local Natural Resources Conservation Service office.

Central Puget Sound River Basins

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CEDAR near Cedar Falls	APR-JUL	16.0	27	34	47	41	52	73
	APR-SEP	21	32	40	50	48	59	80
REX near Cedar Falls	APR-JUL	2.9	7.7	11.0	44	14.3	19.0	25
	APR-SEP	4.2	9.4	13.0	46	16.2	22	28
CEDAR RIVER at Cedar Falls	APR-JUL	12.0	25	34	46	43	56	74
	APR-SEP	11.0	24	33	45	42	55	73
SOUTH FORK TOLT near Index	APR-JUL	5.4	7.0	8.0	54	9.0	10.6	14.7
	APR-SEP	6.2	8.2	9.5	56	10.8	12.8	16.9

CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg

CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

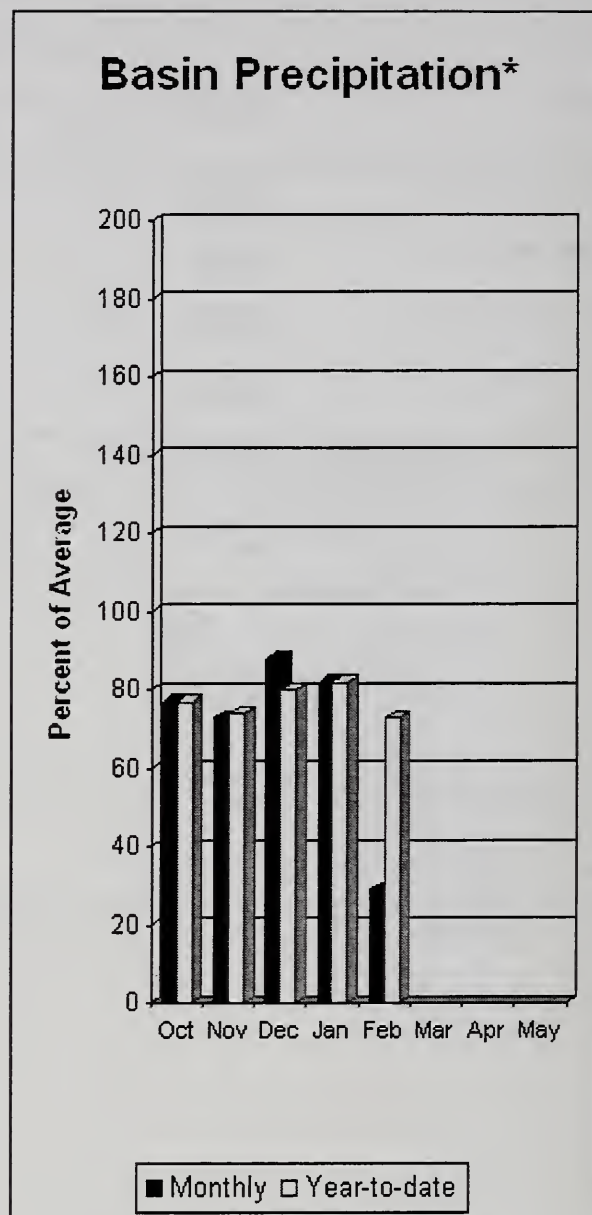
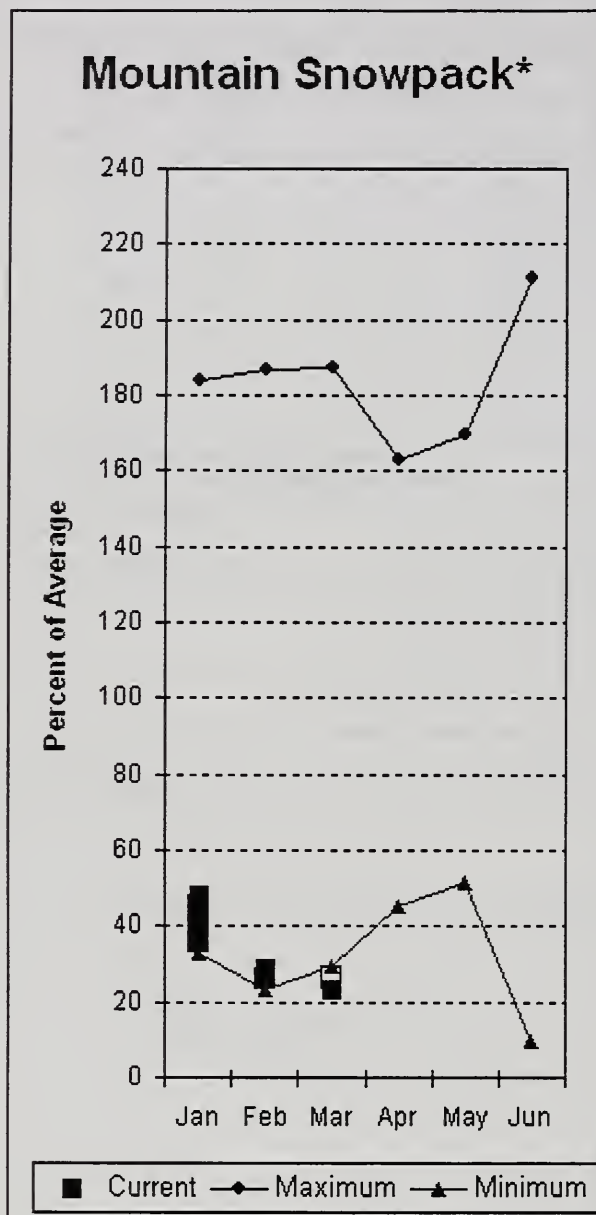
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
CEDAR RIVER	5	8	8
TOLT RIVER	3	17	22
SNOQUALMIE RIVER	6	17	18
SKYKOMISH RIVER	4	22	23

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

North Puget Sound River Basins



*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 56% of average for the spring and summer period. February streamflow in Skagit River was 67% of average. Other forecast points included the Baker River at 58% and Thunder Creek at 63% of average. All three basins are expected to see record low flows this season. Basin-wide precipitation for February was 29% of average, bringing water-year-to-date to 73% of average. March 1 average snow cover in Skagit River Basin was 25%, and Nooksack River Basin was 24%. Baker River Basin snow surveys reported 21%. Rainy Pass SNOTEL, at 4,780 feet, had 11.1 inches of water content. Average March 1 water content is 38.2 inches at Rainy Pass. March 1 Skagit River reservoir storage was 133% of average and 80% of capacity. Average temperatures for February were 1 degree below normal for the basin and 1 degree above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

North Puget Sound River Basins

Streamflow Forecasts - March 1, 2005

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	APR-JUL	124	139	150	64	161	176	234
	APR-SEP	180	200	210	63	220	240	333
SKAGIT at Newhalem (2)	APR-JUL	805	935	1020	55	1110	1230	1864
	APR-SEP	1000	1140	1240	56	1340	1480	2217
BAKER RIVER near Concrete	APR-JUL	355	430	480	58	530	605	828
	APR-SEP	465	550	610	58	670	755	1050

NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February

NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

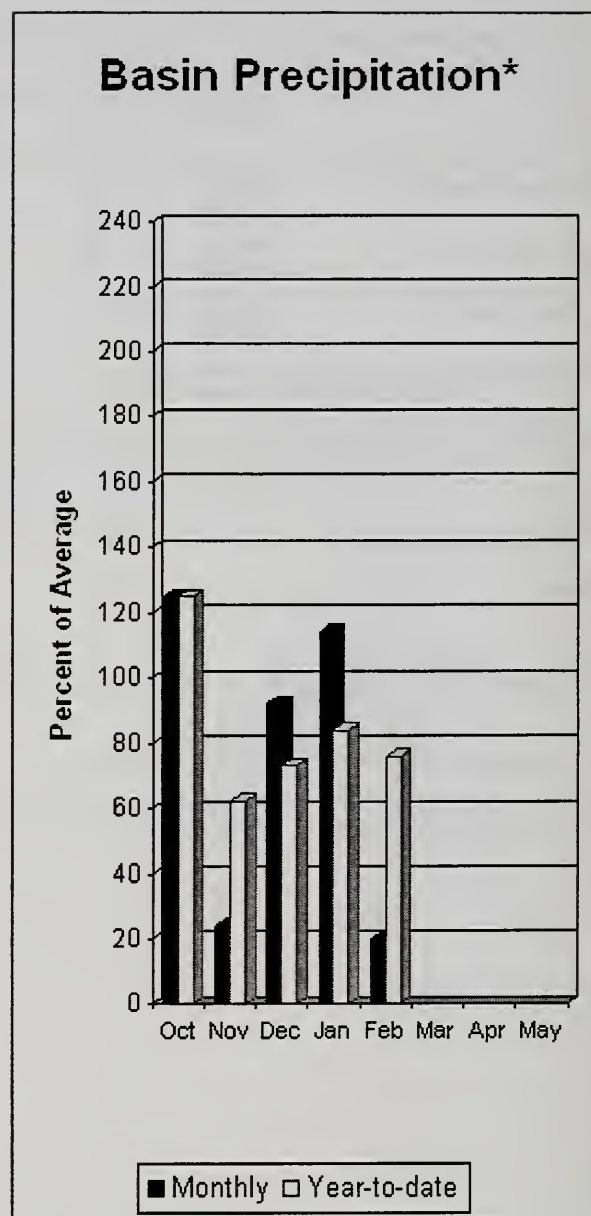
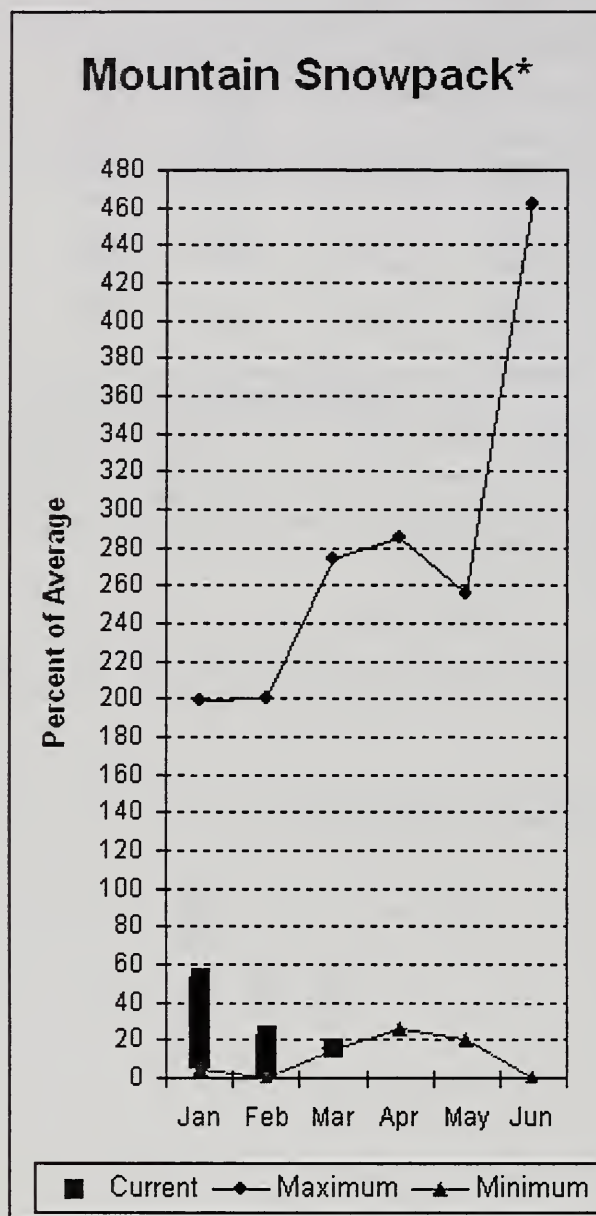
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	1115.5	---	818.3	SKAGIT RIVER	13	31	25
DIABLO RESERVOIR	90.6	87.6	---	85.7	BAKER RIVER	3	19	21
					NOOKSACK RIVER	2	23	24

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Olympic Peninsula River Basins



*Based on selected stations

Forecasted average runoff for streamflow in the Dungeness River and Elwha River basins is 54% and 52% respectively (new record low flows). Big Quilcene and Wynoochee rivers should expect below average runoff this summer also. February precipitation was 20% of average. Precipitation has accumulated at 76% of average for the water year. February precipitation at Quillayute was 3.42 inches. The thirty-year average for February is 12.35 inches. Olympic Peninsula snowpack averaged 38% of normal on the east side and only 7% in the Hurricane Ridge area on March 1. Temperatures were 1 degrees below average for February and 1-2 degrees above average for the water year.

For more information contact your local Natural Resources Conservation Service office.

Olympic Peninsula River Basins

Streamflow Forecasts - March 1, 2005

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *					30-Yr Avg. (1000AF)	
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)		10% (1000AF)
=====								
DUNGENESS near Sequim	APR-SEP	65	75	82	54	89	99	152
	APR-JUL	55	63	68	55	73	81	124
ELWHA near Port Angeles	APR-SEP	190	230	260	52	290	330	503
	APR-JUL	166	200	220	53	240	275	419

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of February

OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - March 1, 2005

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	4	16	16

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.



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Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:
<http://www.wa.nrcs.usda.gov/snow>

Oregon:
<http://www.or.nrcs.usda.gov/snow>

Idaho:
<http://www.id.nrcs.usda.gov/snow>

National Water and Climate Center (NWCC):
<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:
<ftp.wcc.nrcs.usda.gov>

USDA-NRCS Agency Homepages

Washington:
<http://www.wa.nrcs.usda.gov/nrcs>

NRCS National:
<http://www.nrcs.usda.gov>

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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

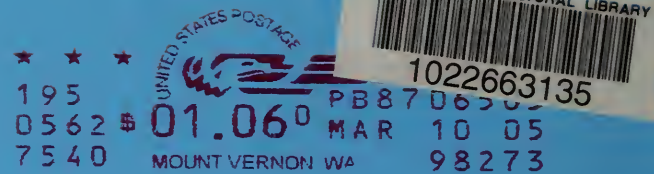
Canada	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
State	Washington State Department of Ecology Washington State Department of Natural Resources
Federal	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
Private	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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Washington Water Supply Outlook Report

Natural Resources Conservation Service
Spokane, WA

